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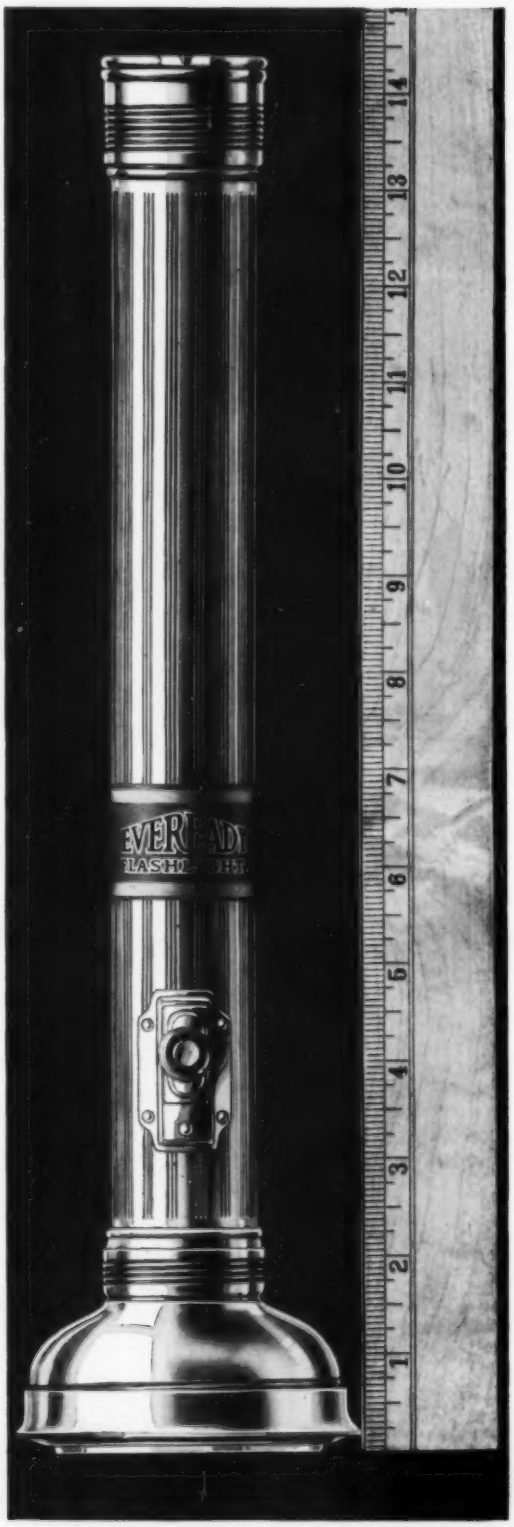

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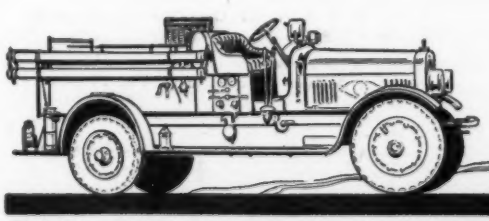

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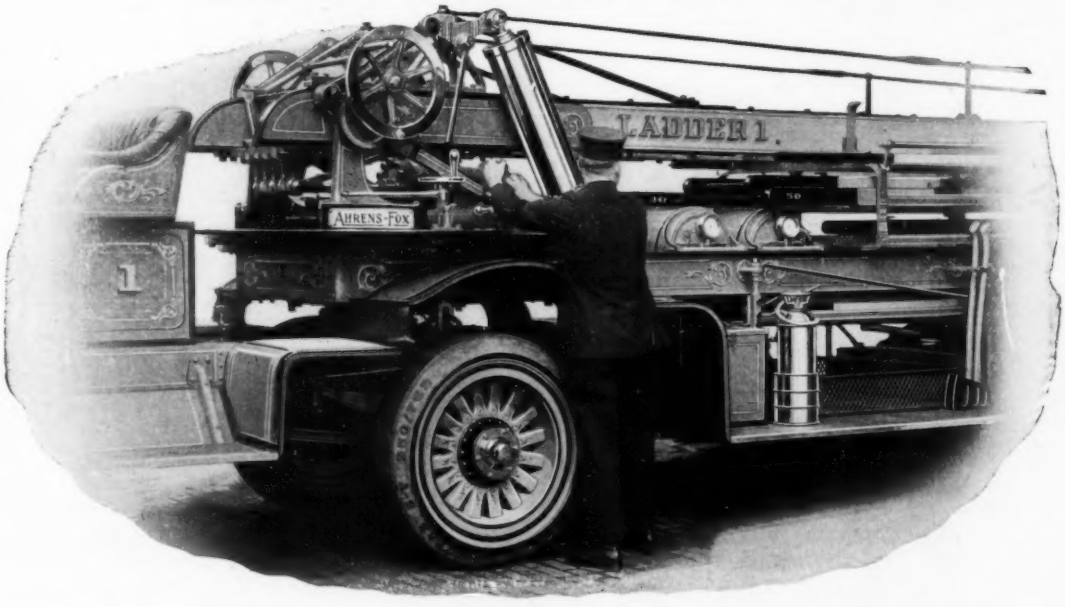

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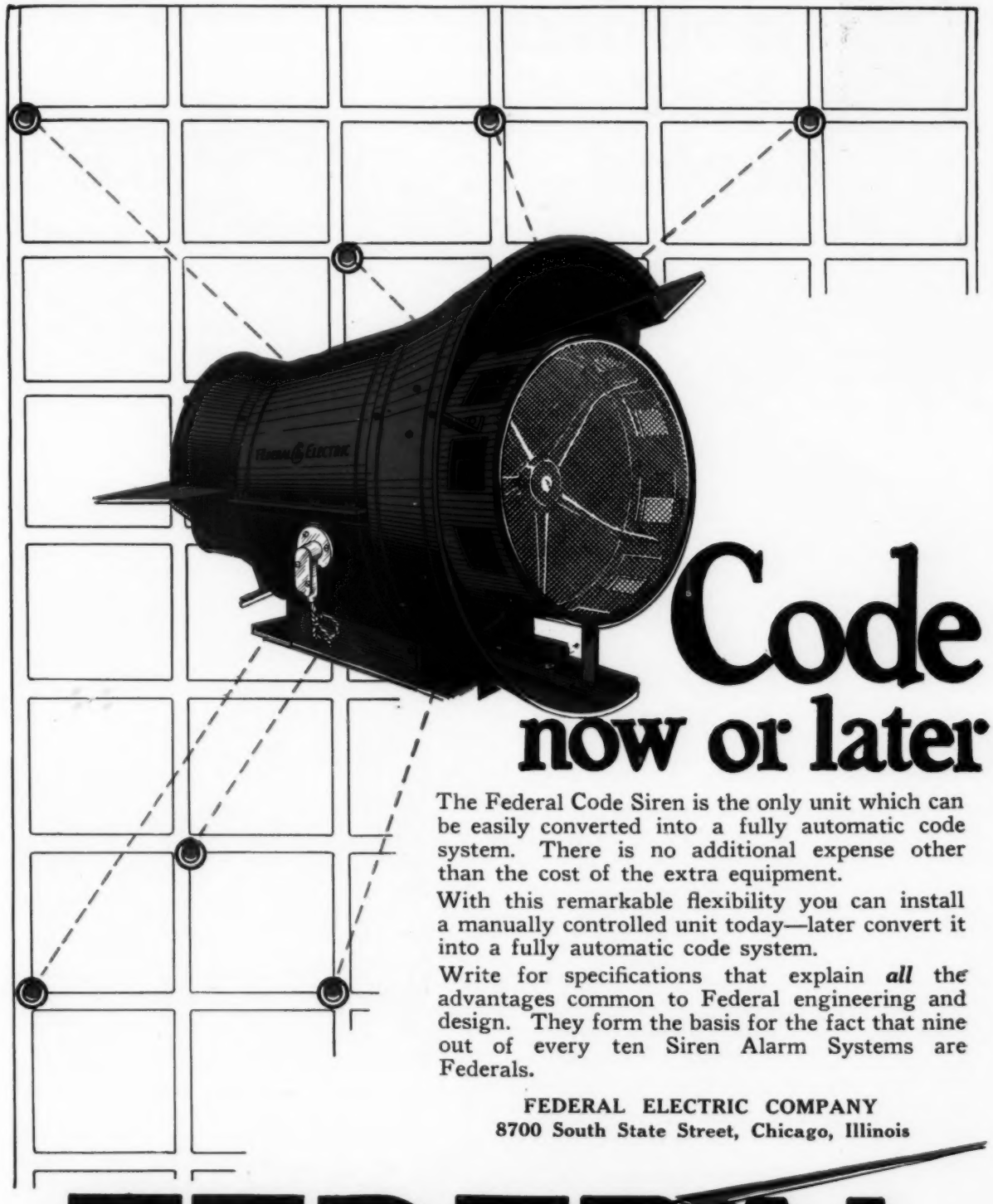

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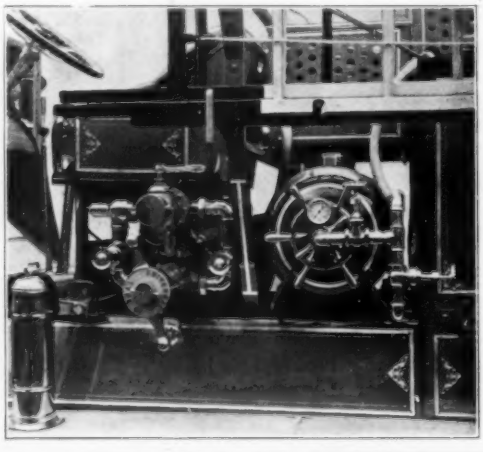

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The Journal of the Fire Protection Profession

VOLUME LXXX JUNE 15, 1927 NUMBER 12

Portland Ready for New England Chiefs

Convention City Has Efficient Department Under Leadership of Chief Sanborn—Early History and Description of Apparatus

By HARRY BELKNAP

WITH but the most meagre of equipment, the fire service of Portland, Maine, the 1927 convention city of the New England Association of Fire Chiefs, has grown from a department built about an imported English fire engine to its present force of 113 permanent firemen and twenty-six call men. In 1768, each family in Portland was obligated by law to keep fire buckets on hand for emergency use; in 1927, the residents of the city rest assured that the matter of fire protection is under capable and efficient leadership.

Chief Oliver T. Sanborn, Convention Host

Portland is the mecca of eastern vacationists and those who follow the call of the fishing line. Its principal industries are the handling of ship stores, supplies, canning, and the manufacture of engines, screens, matches and tile. Three railroads and a number of steamship companies, as well as some fine roads, afford ready access to the city.

The city is situated on a peninsular and at the eastern and western ends are promenades; the eastern walk affording a fine view of Casco Bay, the numerous islands, the shores of Falmouth and Cape Elizabeth, and beyond to the Atlantic Ocean, and the western one looking over a broad sweep of country extending to the White Mountains of New Hampshire. Portland is rich in historic lore. It was the birthplace of the great American poet, Henry Wadsworth Longfellow, of Commodore Edward Preble who subdued the Mediterranean pirates, and of Thomas Brackett Reed, the noted statesman.

Portland has a population of 77,000 and is a city well provided with up-to-date stores, hotels, clubs and theatres. It is easily reached by motor from Boston over good roads—part of the way by the famous Newburyport Turnpike and thence by direct route or by the slightly longer but more beautiful scenic drive along the shore past the famous beach resorts of the New Hampshire and Maine coast.

The fire department, headed by Chief Oliver T. Sanborn, Deputy Chief Albion H. Moulton, and District Chief William R. Read, consists of 113 permanent firemen and 26 call men. There are also ten volunteer firemen who man a Reo combination hose and chemical truck on Peaks Island and there are three volunteers in charge of hose and extinguishers on other islands in the harbor protected by the city.

Fire Protection Considered in 1768

The first reference in town records to the subject of protection against fire is found in reports of a town meeting of the town of Falmouth (now Portland) on March 29, 1768, when it was voted to appoint several fire wards whose badge of office should be a long staff. These men were to take charge at times of fires and all citizens were subject to their orders on such occasions. Every family was obliged to keep fire buckets on hand for emergency use and a number of fire hooks were provided by the town.

In 1787 the first hand fire engine was purchased by subscription and was a machine imported from England. In November of that year a town meeting was held to consider the following article: "To see if the town will raise any money to build an engine house and pay what may be due for freight, insurance, etc., on an engine, lately purchased by a number of the inhabitants of said town, and consider of any matters relating to said engine." The following action was taken: "The subscribers for an engine having voted that the engine be presented to the town, the town agreeing to pay what is yet due for it, provide a house for it, and taking care of it in all respects as a town engine."

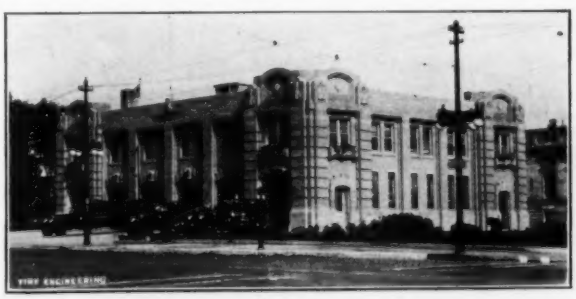
At a meeting in May, 1788, it was voted "that Mr. Fox petition the General Court that the import of the engine, being 4 pounds, 8 shillings, might be remitted to the town, as they had suffered greatly by the war."

In 1793 the sum of 100 pounds was appropriated by the town for the purchase of another engine and Daniel Tucker, Eben Preble and Stephen Deblois were chosen a committee to make the purchase.

Second Apparatus Purchased in 1800

The next engine of which there is any record is the old "Cataract," afterwards known as the "Lobster," which was built in London in 1800 and, according to the appropriation voted, cost $800. This machine arrived in 1802 and a new house was built for it.

A meeting was held in 1821 at which time $500 was voted for the purchase of a private engine. In 1826 a committee made the following report: "That they recommend to the town to purchase, 1st, a large engine made by Merrick and Agnew, of Philadelphia; 2nd, in order if possible to secure a constant supply



Central Fire Station Dedicated in 1925

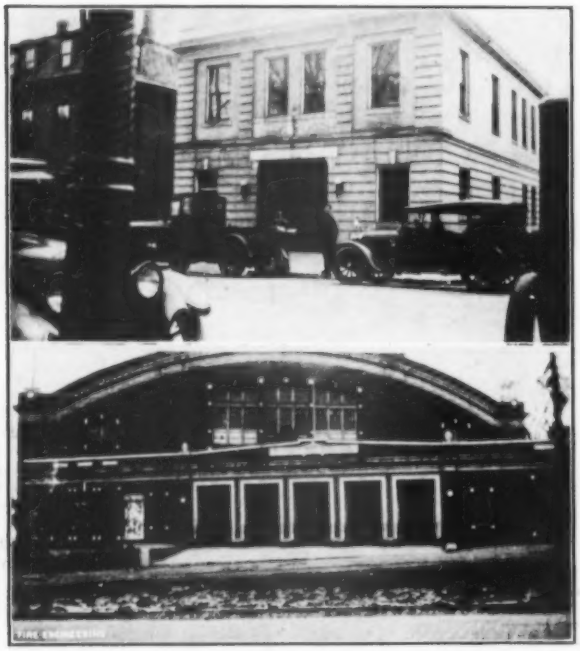
of water for the large engines stationed at a fire, they recommend that some of the engines now belonging to the town be fitted with suction power and hose for the purpose of taking the water from the dock, wells, or reservoirs, and propelling it through hose to the large engines, or if it is impracticable to do this, that a new engine be purchased for that purpose; 3rd, recommend building a reservoir on Federal Street, near Court; 4th, that three or four sails of a suitable size to cover those buildings exposed to a fire be procured which by being constantly wet may prevent them from taking fire."

A new suction engine was purchased shortly after this

report was made and was the first of this type used in Portland although it developed years afterward when the old Cataract was sent to a shop for repairs that this machine was really built for use as a suction engine but had never been used as such.

In the year 1827 the department consisted of the following companies: Deluge, Cataract, Portland, Hydraulion, Neptune, Extinguisher, Vigilant, and Alert engine companies and a hose and axe company.

The act establishing the Portland Fire Department was passed



Upper, Electrical Headquarters in which are Located Fire and Police Signal Systems. Lower, Exposition Building in Which Will be Located Exhibits of Manufacturers

by the Legislature in 1830, and was immediately adopted by the town. In 1835 the town voted to sell two of the small engines and get one large one, and in October of the same year an order was given to sell three more of the old machines, and another large one was ordered. In March, 1837, a petition was offered for a new engine to protect the upper end of the city and this agitation resulted in the purchase of an engine that was named the "Ocean." In 1842 another engine was purchased and in 1845 an engine and a hose carriage were added. Two engines purchased by subscription were known as "Volunteer" and "Atlantic." In 1848 the old "Hydraulion" was replaced by the "Portland."

Hand Tubs Replaced by Steam Engines

In 1849 a new house was built for the old Torren Engine No. 6. In 1852 engine companies 4, 6, and 8 petitioned for new engines and three new machines were ordered.

The department was reorganized in 1857 under Chief Leavitt and the following companies petitioned for organization under the new regime: Hook and Ladder 1, Casco Engine Co. No. 1, Tiger No. 3, Ocean No. 4, Portland No. 5, Young America No. 6, Deluge No. 7, Dirigo No. 8, Pacific No. 9. In 1859 a new machine was purchased for the Pacific Company No. 9. This was the last hand engine purchased for Portland. Later in the same year the question of steam fire engines came up for discussion and a contract was signed with the Amoskeagy Works of Manchester, N. H., for a steam fire engine which was placed in service in 1859 and was named Machigonne No. 1. The next steamer bought was named Falmouth. The old hand tubs were gradually replaced by steam engines until in 1888 the equipment consisted of six steam fire engines, four hook and ladder trucks, five hose carriages, four hose wagons, three coal wagons, five hose sleds, two fire boats, six exercise sleds, two sleighs, three exercise wagons, one hand engine located on Peak's Island, and 15,000 feet of hose.

Roster of 1888

The roster of the Portland Fire Department officers in 1888 was as follows: Committee on Fire Department, Aldermen William M. Marks and V. C. Wilson, Councilmen J. M. Peck, Ozman Adams and R. A. McClutchy; Board of Engineers, Granville H. Cloyes, C. W. Cushing, R. W. Jackson, Thomas Payne and Samuel Hodgman; Machigonne Steamer No. 1, second class Amoskeag engine and hose carriage located at 557 Congress Street, S. Thurston, foreman; Portland Steamer No. 2, third size Silsby engine and 4-wheeled hose wagon, located at 134 Congress Street, J. Winslow, foreman; Cumberland Steamer No. 3, second class Amoskeag engine, 4-wheeled hose wagon, located at 176 Brackett St., H. S. Bennett, foreman; Falmouth Steamer No. 4, second class Amoskeag engine, 4-wheeled hose wagon, located at 152 Spring Street, A. F. Griffin, foreman; Casco Steamer No. 5, second class Amoskeag engine, 4-wheeled hose carriage, located at 382 Congress Street, J. N. Long, foreman; Dirigo Hose Company No. 6, four-wheeled hose carriage located at 47 Burnham Street, C. E. Jordan, foreman; Hayes Truck No. 1, two horse truck with Hayes patent extension ladder, length of ladder 85 feet, located at 99 India Street, J. E. Loring, foreman; Eagle Hook and Ladder No. 2, one horse truck, located at 133 Market Street, G. W. Platt, foreman; Bramhall Hook and Ladder No. 3, one horse truck, located at 163 Brackett Street, J. E. Cady, foreman; and Peaks Island Engine Company, A. M. Brackett, foreman. There were 56 fire alarm boxes at this time. The chief of department was Granville H. Cloyes.

The Relief Association of the Portland Fire Department was formed in March, 1848, and incorporated in 1852. It was organized for the purpose of assisting those members who, in the discharge of their duties as firemen, should be injured or disabled, or in case of the death of any member, to aid his family as might seem necessary. In 1883 the association received from the city a lot in Evergreen Cemetery which was dedicated with appropriate ceremonies on October 3, 1886, with an address by Ex-Chief Lewis B. Smith. The association published a souvenir booklet entitled, "Fire Service of Portland," in 1888, and from this has been taken much of the information given above.

City Nearly Destroyed by Fire

The worst fire and the one that left nearly half the city in ruins was "The Big Fire of 1866." The engines were dependent for water supply upon wells and reservoirs which proved inadequate and the flames got beyond control. Aid was called from nearby towns, but the fire continued for nearly two days and entailed a loss of $15,000,000. As a result of this fire steps were at once taken for the installation of a system of fire alarm telegraph and for establishment of a water works.

(*Continued on page* 599)

Upper, Station 2, and Lower, House of Engine 3

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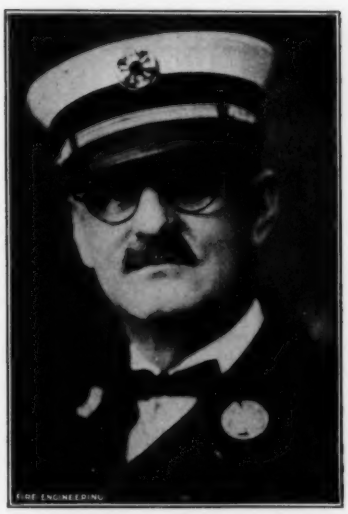

CHIEF WILLIAM H. HAWKINS
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Haverhill, Mass.

OFFICERS, NEW ENGLAND ASSOCIATION OF FIRE CHIEFS

Burning Freight Cars Ignite Plant

Potash in Cars Makes Hot Fire—Spreads to Brick and Frame Implement Plant Buildings

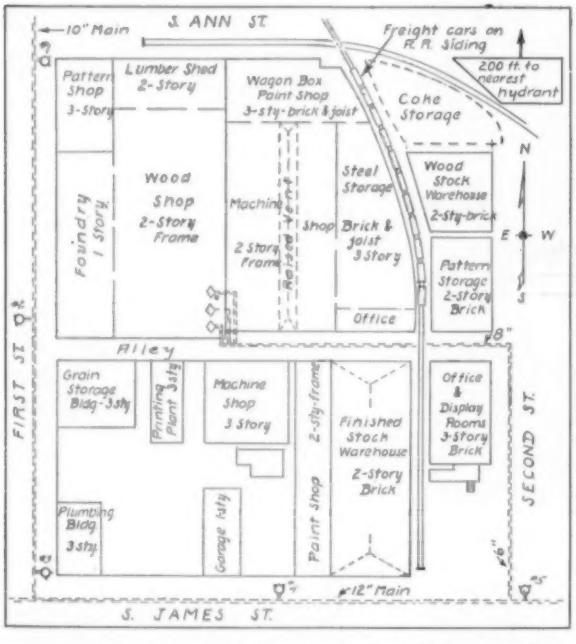
THE fire described in this article of the series on Administration occurred in a northern-central city of about 18,000 population.

The department is made up of the following: 7 engine companies, all equipped with motor pumping engines of from 700 to 750 gallons per minute; 3 truck companies, one of which is equipped with an aerial truck and the other two with city service trucks; 3 hose companies.

Property Involved

The diagram herewith shows a layout of the various units of the plant as well as the surrounding property. This plant, as noted above, was engaged in the manufacture of farm implements. The plant had grown from year to year and as it grew additional buildings were taken over or erected. The result was a group of buildings of various types and qualities.

The only fire protection in the plant was a sprinkler system installed in the wood shop as shown in the diagram. There



were six city hydrants available, five of them being shown in the sketch and the sixth located at a point about 200 feet south of the plant property on Second Street. At the time the fire occurred a 30 mile wind was blowing from the northwest, and the weather was cold, the fire occurring the lattter part of November.

Response to Alarms

The response to alarms in the department of the city in which this fire occurred is as follows:

First alarm, Engine Cos. Nos. 1 and 2; Hose Co. No. 1, and Truck Co. No. 1 (truck company being equipped with aerial truck).

Second alarm, Engine Cos. Nos. 3 and 4, Hose Co. No. 2 and Truck Co. No. 2 (city service truck).

Third or general alarm, Engine Cos. Nos. 5 and 6, Hose Co. No. 3 and Truck Co. No. 3 (this company being equipped with city service truck).

Engine Co. No. 7 is rarely called and is only summoned by special call only.

Water pressure in the mains around the plant was in the neighborhood of 60 pounds at all times and a liberal supply of water was available.

The Fire

The responsibility of this fire really rests with railroad employees who ran a string of box cars onto the siding of the company's property and let them remain there over night. These cars did not contain materials for the company but some of them were filled with potash, which proved very troublesome once fire started.

The fire was discovered about 1 a. m. and at the time of discovery had involved several of the box cars. Apparently the fire started in one of the empty box cars, and by tramps who had evidently had a fire on the floor therein to keep themselves warm. When the fire was discovered wind was blowing the flames and smoke toward the wood box paint shop as shown in the diagram.

A passerby who discovered the fire pulled a box and a first alarm assignment responded.

At the time the first company arrived the fire had involved three box cars and had also entered the paint shop through broken window panes.

How It Was Fought

Engine Co. No. 1 was placed at hydrant No. 1 and a single line stretched along South Ann Street to operate on the burning box cars. A single 2½ inch line with 1¼ inch nozzle was employed. This line operated for a few minutes on the first two box cars and then was stretched to operate into the paint shop which was opened up by members of Truck Co. No. 1.

Engine Co. No. 2 was placed at hydrant No. 2 and a single line stretched with 1¼ inch nozzle to the paint shop.

Hose Co. No. 1 was placed at hydrant No. 5 and a single line stretched with 1⅛ inch nozzle, to operate on the burning box cars.

Truck Co. No. 1 assisted in opening up as noted above, and also assisted in the laying of this last line.

The fire in the paint shop was spreading quick and it required the efforts of the two lines from the engine companies to keep the fire from involving this three story building. The streams from the hose company was insufficient, due to the long stretch of line, to kill the fire in the box cars. It continued to operate, nevertheless, in the hope that one of the lines operating in the paint shop would soon be available to finish up the job in the box cars. But after operating for around five minutes one of the cars containing potash took fire and a flare occurred, sending a sheet of flame broadside from the car into the coke storage space as indicated in the diagram.

Second Alarm Transmitted

The small stream from the hose company was, from this point on worthless for holding the fire in the cars. At the same time the wind carried the heat along the box cars and it swept the front of the wood stock warehouse to the south of the coke storage.

At this point a second alarm was transmitted, but before the apparatus arrived the coke storage was well ablaze and the wood stock warehouse to the south seriously threatened.

The assignment of apparatus on the second alarm was as follows: Engine Co. No. 3 was placed at hydrant No. 4 and a single line stretched to the box cars using a 1¼ inch nozzle.

Engine Co. No. 4 was placed at hydrant No. 3 and a single line stretched with 1¼ inch nozzle to the wood storage warehouse, in an effort to prevent the fire from entering this building.

No line was stretched from the hose company on the second alarm because of the unsatisfactory stream delivered by the line from Hose Co. No. 1.

But even with this additional apparatus the fire continued to spread largely from the intense heat given off by the potash.

Third Alarm Sent In

Additional cars took fire and soon the brick and joist three story building was in serious danger of becoming involved.

At this point a third alarm was transmitted.

Upon the arrival of the first companies on the third alarm fire had gained entrance to the steel storage building and had also spread through one floor of the wood stock warehouse and was coming out of the south end endangering the pattern storage building.

Engine Co. No. 5 was placed at hydrant No. 5 and a single line stretched to cover the pattern shop.

Engine Co. No. 6 was placed at hydrant No. 6 (located 200 feet south of the plant property) and a single line laid to cover the box cars and pattern shop.

(*Continued on page* 605)

Fire Waste Should Concern Every One

Effect of a Local Fire Is Far-Reaching—Property Values Largely Concentrated in Cities—Districts Do Good Work

By RICHARD E. VERNOR, Manager Fire Prevention Department, Western Actuarial Bureau*

IT is just 55 years since Mrs. O'Leary's cow kicked over the lamp in the city of Chicago, starting a fire which burned over 2,500 acres of the city, destroyed some 14,000 buildings, not to mention a huge human casualty list. There are those who have the impression that Chicago's fire problem is concerned with something that happened half a century ago and yet it is an interesting fact that in the nation's second largest ctiy in this enlightened era of 1926, the fire loss daily is so great that it completely nullifies the productive efforts of some 4,000 workers.

It is true that fire waste is an ancient problem and has been a thorn in the flesh of civilization for a great many centuries but it is also equally true that it is still a problem of sufficient importance that the president of the United States annually asks our citizens to turn their attention for one week at least to the study of this situation from both the standpoint of human safety as well as its economic significance.

There are some people who imagine that a fire loss is simply the concern of three parties, first, the person having the fire, second, the Fire Chief and third, the insurance company, and that unless the average citizen happens to be one of these three he therefore has no interest in the matter of property destroyed by fire.

Effect of Fire is Far Reaching

The effects of a local fire may be very far-reaching. Suppose an industrial plant burns down in a city. The workers are thrown out of employment and may not be able for the time being at least to find other employment. If the wage earner has been thrifty he may have accumulated some funds in a savings account in a local bank. With his income stopped it is now necessary for him to withdraw the funds which he has saved in order to buy the necessities of life and thus the bank is immediately affected. He may be buying his home in a building and loan association, and because he is out of employment it is now impossible for him to keep up his payments in this association—rent payments are checked; the wage earner cannot now buy luxuries; he has no money to spend on amusements or church contributions and frequently is not even able to purchase the bare necessities of life—thus, the whole community suffers. A fire frequently means a loss of time, profits, fixed expenses that must go on, the removal of property from the tax records, the cancellation of contracts, the loss of good will, the shifting of workers to other industries and similar losses. The change is endless and fire waste has a community aspect which in far too many localities has been given but little attention. Then, too, there is the expense of the upkeep of our fire department and that portion of the water works system which the fire department uses in extinguishing fires. When all of these other costs have been reckoned our half-billion dollar fire waste has suddenly grown to twice that sum.

Loss Placed on a Comparative Basis

Those who are making a careful study of the situation are agreed that the total waste is conservatively at least one billion dollars. During the World War figures amounting to billions of dollars were discussed rather fluently and yet numbers of this size are so staggering as to baffle a human imagination. Perhaps a few illustrations will bring home the enormity of this waste. The president of the United States receives an annual salary of $75,000 and in addition is allowed $25,000 for traveling and official entertainment, making his total income $100,000. America's annual fire waste represents a sum sufficiently large to be able to pay for the upkeep of the office of our President for no less than ten thousand years. There are 725,000 school teachers employed in the public schools of the United States at an average salary of $1,166.00 per year. With our billion dollar fire waste we could double the salary of every teacher and still have enough left on hand to provide a vacation fund for each of them amounting to $213.31. It is estimated that 350,000 persons cross the Brooklyn Bridge every day. A billion dollars is so much that with it we could buy enough Ford automobiles to give everyone who crossed that bridge for five days a car or for one day we could hand a check to every person crossing amounting to over $2,800. Perhaps these simple illustrations will suffice to impress the importance of what has been called America's greatest crime.

Our fire waste has a double barreled significance. It is an economic and a safety problem. There are still a great many of our citizens who are under the impression that fire waste is chiefly a concern for the institution of insurance. The latter business long since recognized it as an economic problem and much of the pioneering work in fire prevention has been done by it. In fact, it seems that fire prevention is so shot through with an insurance complex that many of us believe fire waste to be a problem with which the rest of us have little concern.

Insurance Stabilizes Credit

Fire insurance is a very necessary institution. It is a foundation of our whole system of national credit. You couldn't borrow a nickel on a piece of property upon which you could not secure reliable fire insurance. Time and again it has been able to bring temporary relief to stricken communities, which otherwise might have faced financial ruin. Where would San Francisco, Baltimore, Boston, Chicago, Astoria and any number of other conflagration swept localities have been without the institution of insurance? It performs a very definite service to the community, but it never yet has replaced a single atom of any destroyed property except by substitution. The moment a fire occurs, our national wealth is immediately depleted by the actual value of the property destroyed and no transfer of a few dollars from one pocket to another in any way replaces that which was burned.

Our national ash pile is not only a matter for the study of our urban centers, but it concerns our forests and our farms as well. For instance, during 1925 this country suffered 85,000 forest fires which burned 26,000,000 acres. With reference to the farm situation, it is interesting to note that the lumber destroyed last year by fire in farm buildings alone equalled one-eighth of our total timber production. The farmer has a peculiar fire prevention problem in that his buildings are usually of such combustible nature that they burn quickly—there are no building codes to limit or control agricultural construction; rural fire departments are not yet universally organized and there has been a great deal of misinformation spread about concerning the control of lightning. It might be said that, with proper installation, lightning rods will give almost 100% protection.

Solution of Problem Is With Individual

Just as your state is made up of the individual cities and communities so is your city composed of individuals. It is with the individual then that we must commence to find our solution of the fire waste problem.

What are you doing about it? Are you throwing your matches in waste baskets or out of windows where they may fall upon an awning below? Do you extinguish your cigar and cigarette stubs before discarding them? Do you have a fire drill in your home? Have you taught your own family the large number of potential fire hazards which exist continuously in the average American dwelling? Does your wife or daughter understand the danger of generating static electricity when they rub silk and woolen goods? Do you use kerosene for starting fires? Do you know the proper method of turning in a fire alarm? Do you know it well enough so you would be willing to write out the directions and have them turned over for use for instruction purposes in your public schools? Have you forgotten that with the possible exception of San Francisco practically every big conflagration which has occurred in the United States in the last thirty years can be traced to a simple, preventable, trivial cause of fire? Do your wife and children know what to do if they should catch on fire? Do you call a competent electrician when you need to have wiring done in your home or are you flirting with the fire demon by your own amateur installations? If you have not given attention to these problems which are so important as affecting the safety of your own family, no time should be lost in giving the matter your very serious attention.

Inspection Necessary to Business

Then carry the same idea into your business. Do you have a regular inspection of your business premises by someone competent to do the work? Are you organized to combat fire if it should occur? In other words, are you as an individual

* Paper delivered at Second Short Course for Fire-Fighters at Iowa State College, Ames, Ia.

contributing your share toward the safety of the community in which you doubtless take so much pride? Fire prevention is, therefore, a personal problem and there is a great deal you can do yourself not only in the mechanical things which will make conditions about you safer, but in spreading the gospel of fire safety to all of those with whom you come in contact.

The community aspects of fire prevention are also very interesting for by no means have the various cities and towns throughout the land ignored the possibilities of doing something intelligent toward the reduction of terrific waste. For instance, there are over 500 cities in this country which at the present time have permanent all-year-round fire prevention committees and which are making a conscientious effort to reduce their fire losses locally. These cities are competing with each other in what is known as the Inter-Chamber Fire Waste Contest which is conducted by the Chamber of Commerce of the United States and the National Fire Waste Council. Of the cities which submitted reports on their 1925 activities, 70% reduced their loss of life by fire or reported no fire death; 56.4% reduced their actual property loss; 17.1% reduced their actual number of fires; 44.6% reduced their number of fires exceeding 1,000 loss. Thus, we have some concrete results of community fire prevention activities.

These local communities have accomplished some startling results through a comprehensive all-year-round program. Fire departments which formerly fought fires in a more or less hit or miss fashion resulting in a great deal of unnecessary damage, are now being schooled in the modern science of fire fighting. They are studying everything from the proper method of ventilating buildings to the chemistry of fire, and then in our larger cities we have thirty day courses for firemen in modern drill methods. Two state educational institutions have already established short courses for firemen and the interest shown in these schools has been remarkable.

Fire Department Considers Fire Prevention

The modern fire department realizes its obligation to the community as a fire prevention organization in addition to its extinguishing service—important as that is. Many cities have a regular inspection system whereby the entire mercantile section of the city is regularly inspected by uniformed firemen. The same is true of public buildings and in a few instances even dwellings are occasionally inspected. Some modern fire departments are doing salvage work and indications are that more and more of this will be done as time goes on.

These local fire prevention committees which were mentioned above are also studying the waterworks system, the local building codes and ordinances and are planning and executing all-year-round educational plans consisting of speakers before local clubs, the use of home inspection blanks in the schools, boy scouts' fire departments, and other work with school children, until in some communities they have built up such a strong fire prevention sentiment that fires have become very unpopular. The intelligent use of home inspection blanks in Kansas City, Missouri, under the direction of the Kansas City Safety Council has resulted in a reduction of 800 dwelling house fires annually since 1922.

Portland, Oregon, Is Good Example

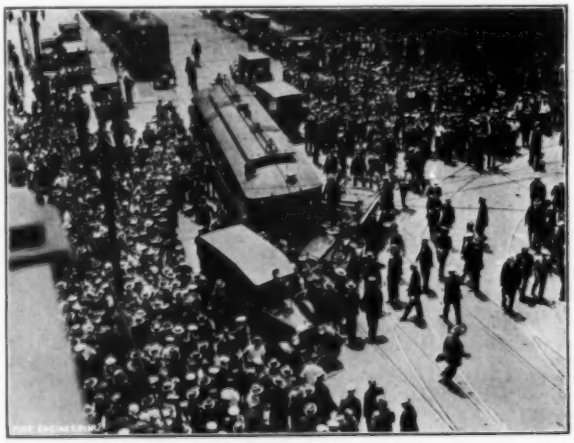
As an illustration of what a city can accomplish, Portland, Oregon, which finished third in its class in the 1924 contest and won in its class in the 1925 contest, may be used. The population is 275,000. The per capita loss in 1925 was $3.25 as compared with 3.91 as an average for the five year premium. A fine building code was recently adopted; nearly 100,000 inspections were made during the year by the fire department; an arson squad was created and seven convictions resulted during 1925; 260 old buildings were condemned and razed; 72,000 school children received instruction in fire prevention throughout the year; 84 lectures and addresses were given by the department. Albany, Georgia, won the 1925 Inter Chamber Fire Waste Contest although the population is under 20,000. There were no deaths or injuries in 1925 as far as fire was concerned. There is a modern fire department with a drill school, a modern fire alarm, and a modern building code. The fire department made 6,000 inspections in 1925. Each residence was inspected once and the business houses inspected monthly. During a drought every cotton warehouse was inspected by firemen three times nightly; seven fires thus discovered were confined to one bale. The press and all clubs co-operated in the campaign. The splendid fire chief was active; drills were held in the schools semi-monthly, and the fires were reduced steadily from 166 in 1920 to 127 in 1925 while the per capital loss fell from $173 to $150. Any number of similar illustrations could be given to prove that fire prevention is a practicable business problem which can be solved through an intelligent effort. You should by all means co-operate with the local fire prevention committee in your community for it is just common sense to do so.

Death List Is Appalling

If you can't develop a fire prevention conscience as a business or civic proposition it is possible that the humanitarian feature may move you to action. Sometimes we talk too much about dollars and cents and not enough about human values. We must not forget the 572 bodies which were taken out of the Iroquois Theatre in Chicago in 1903. We can never eradicate from our memory the 145 girls who perished in the Triangle Shirt Waist Factory fire in New York. Seventy-six persons were cremated in a country schoolhouse near Cleveland, South Carolina, in 1923. Twenty-two girls were cremated in the Hope Development School near Los Angeles on June 1, 1924, and on Christmas Eve the same year at Babbs Switch, Oklahoma, 37 charred bodies were taken from the ashes following a Christmas tree entertainment. In September of this year 50 persons were cremated in a makeshift theatre near Limerick, Ireland. Every fire prevention principle was violated. Somehow or other the newspaper reports of these tragedies seem far away from us and occur with such frequency that we fail to grasp their true significance.

If you will pardon a personal reference, this summer the writer had the misfortune to gaze upon the ghastly roasted remains of a mother of four children while the firemen were still trying to cool the body sufficiently so that the undertaker could remove it from the ashes of her summer home. It was horrible in the extreme and was a terrible penalty to have to pay for the violation of a simple law of physics, namely, when certain goods are rubbed, static electricity is generated and if these goods have been soaked in gasoline an explosion is likely to follow. The result—four motherless children and the father with a tragedy written on their hearts which they will never forget.

Individual community, state and national organizations are making a determined fight on the fire demon. Everyone should enlist in the Fire Prevention Army, for as some writer has put it, we should all "say it with safety and save the flowers for a happier occasion."



Will Such Accidents Ever Stop?

This is what happens when two objects try to occupy the same space at the same time. Fire Company No. 2 of Los Angeles, Cal., was responding to a fire with the usual number of firemen riding on the running board. A trolley car crashed into it from the side and pinned one of the firemen so that it required a number of men and a tow car to rescue the injured man. His leg was so badly injured that the doctors believed that it was necessary to amputate the damaged limb. Note how the steering wheel is twisted.

To Make Code on Fireproofing

The American Institute of Steel Construction is taking steps in the preparation of a standard code of fireproofing which will codify all available data and place it at the disposal of the engineer.

This was brought out in a talk by Lee H. Miller, chief engineer of that organization in a talk before the Brooklyn Engineers' Club. He said that the proper codification of basic scientific facts would enable the architect and engineer to safeguard against the fire hazard in a manner in which he now designs against the stress of live and dead loads.

Spokane, Wash., Considers Station Bids—Seven bids have been submitted for the construction of a fire station in Spokane, Wash.

New Rules of the New York Fire Department

This Last Installment Covers Sections Dealing With Reports, Requisitions and Property Accountability and Uniforms

FOLLOWING is the last installment of the "Rules and Regulations of the Uniformed Force of the Fire Department of the City of New York," just issued by that department, and which have been published serially in their entirety in FIRE ENGINEERING. *This book has been compiled and edited by Captain John J. McCarthy, of H. & L. No. 43, detailed in charge of the Division of Public Assembly at Fire Headquarters, who worked under the personal supervision of Chief John Kenlon. This installment includes sections covering the making of Reports, Requisitions and Property Accountability and Uniforms:*

Report Forms (Continued)

"I"—Conduct Prejudicial to the Interest or Welfare of the Department

Specification 1. That.....
of ..... Co. No. ....., was guilty of conduct prejudicial to the interest or welfare of the Department in that he.....
.....
This at (give location).....
at about ..... o'clock ..... M., on the .....
day of ..... 19...., in violation of Section ...., Rules and Regulations, 19....
Witnesses:
.....
.....

Specification 2.
Specification 3.

Same as above. Specifications will be made to cover other cases of conduct prejudicial to the interest or welfare of the Department, and should give places and dates.

Captain, ... Co. No. .....

"J"—Conduct Tending to Bring Reproach or Reflection Upon the Department

Specification 1. That.....
of ..... Co. No. ....., did .....
.....
.....
.....
This at (give location) .....
at about ..... o'clock ..... M., on the .....
day of ..... 19...., in violation of Section ...., Rules and Regulations, 19....
Witnesses:
.....
.....

Specification 2.
Specification 3.

Same as above. Specifications will be made to cover other cases of Conduct Tending to Bring Reproach or Reflection upon the Department, and should show places and dates.

(This form shall be used when members are alleged to be guilty of improper conduct which is not covered specifically by any rule in this book.)

Captain, ... Co. No. .....

"L"—Affidavit of Complainant

New York, ..., 19....

County of .....
City and State } ss.:
of New York.

I, ... being duly sworn, do depose and say that I reside at No.....
.....
Borough of ....., City of .....
County of ....., State of .....
.....
.....
.....
.....
.....

Without expense to the Fire Department or the City of New York, I hereby agree to appear at any trial or hearing held as the result of these charges made by me to substantiate the facts set forth in my affidavit.

.....

Signed and sworn to before me
this ..... day of ....., 19....

"K"—Violation of Section.....Rules and Regulations, 19

Specification 1. That.....
of ..... Co. No. ....., did violate the provisions of Section ....., Rules and Regulations, 19....., in that he.....
.....
.....
.....
This at ..... o'clock ..... M., on the ..... day of ....., 19....., at the the quarters of ..... Co., No. ....., or at (give location) .....
in violation of the above section.
Witnesses:
.....
.....
Captain, ... Co. No. .....

"M"—Absence Without Leave Report

FIRE DEPARTMENT—CITY OF NEW YORK
New York, ... 19....

Chief of Department,
Sir:—

I respectfully report that I was absent without leave from proper authority from the quarters of ..... Co. No. ....., from ..... o'clock ... M., on the ..... day of ..... 19 ..., to ..... o'clock ... M., on the ..... day of ..... 19...., and my explanation for such absence is as follows:
.....
.....
.....
.....
.....
.....
(Sign name rank company)
Witnesses:
.....
(Sign name rank company)
.....
(Sign name rank company)

German Apparatus Uses "Soap Suds"

Soap suds are the basic principle in the design of a fire-fighting apparatus in Berlin, Germany. It is designed to fight oil fires. The equipment is mounted on a two-wheel trailer and consists of two separate foam generators. The soap that is used by the generators is stored in cans arranged at the side of the apparatus—the total capacity is 2,500 pounds. After a quantity of soap is placed at the top of one of the generators, water at high pressure enters the tank and is whirled about by a water wheel. Each generator is capable of making 2,000 gallons of foam a minute.

Haddonfield, N. J., Against Paid Department—The volunteer members of the fire department in Haddonfield, N. J., are opposed to the installation of a paid fire department. The council tried to pass plans for a semi-paid department.

Beverly Has Firemen's Monument

One of the most artistic firemen's monuments in this country is situated in the Hale Street Cemetery in Beverly, Mass., where impressive memorial exercises are held every year. It was erected by the Beverly Firemen's Relief Association in honor of the heroic dead of the fire department.

Beverly, Mass., Monument

The monument is made of Westerly granite and bears the inscription "Beverly Firemen's Relief Association." The diestone displays the figure of a fireman, life sized, carved in bas-relief in the panel on front. Every detail has been chiseled with accuracy.

At the bottom of the panel on each side of the figure is a reproduction of a hose nozzle and over the top of the panel are two crossed fire axes.

On the back side of the panel there is carved the insignia of the relief organization and the inscription "Organized March 10, 1881" "Memorial Dedicated, October 3, 1926."

HARRY BELKNAP.

Eastern Division of Chiefs Formed

With John Kenlon, chief of the New York fire department, as host to the visiting chiefs, a meeting was held on May 25 in the Hotel Roosevelt to form the Eastern Association of Fire Chiefs. Fire department heads from New Jersey, Pennsylvania and New York attended the meeting, which occupied a full day.

This unit will be a divisional section of the International Association of Fire Chiefs and will cover a territory of the entire states of New York, New Jersey, Pennsylvania, Maryland, Delaware and the District of Columbia. It is believed that once this organization starts functioning, it will be the strongest of the sectional organizations that are being formed all over the United States and certain parts of Canada.

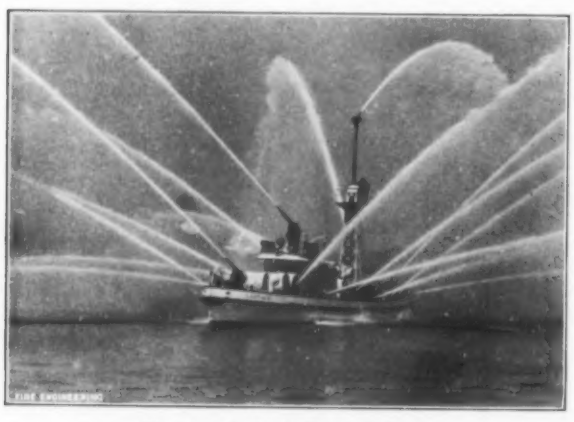
Chief Kenlon was unanimously proposed for the presidency of this new section but he declined the honor, saying that the pressure of other important matters prevented him from serving. He pledged, however, to place the entire facilities of his department for the interests of the new organization. He acted as the temporary chairman of the meeting.

Chief Charles W. Greenfield of the DuPont Company, Arlington, N. J., was elected president. Chief Greenfield is president of the New Jersey State Fire Chiefs' Association with a membership of six hundred. He has been instrumental in building up his association to such a high plane and he has served as its president for a number of years. The other officers elected are Chief Ross B. Davis, Philadelphia, vice-president; Chief James H. Golden, Cohoes, N. Y., secretary, and Chief Richard L. Smith of Pittsburgh, treasurer.

The first matter which the section considered was the proposal of Chief Kenlon that the section formulate standards and otherwise function on the same high plane as other recognized technical organizations. He proposed that the society have a consulting engineer to act in an advisory capacity without compensation. Upon motion of Chief Peter Carter of Collingswood, Charles Fisher of New York and formerly of the Schedule Rating Office in Newark was elected.

A constitution and by-laws will be drafted by a committee consisting of President Greenfield as chairman; Chief F. E. Soule of Coatesville, Pa.; Chief John Gibson, Mt. Vernon, N. Y.; Chief E. C. Alexander of Elkton, Md.; Chief William Lutz of Wilmington, Del., and Chief John Watson of Washington, D. C. The general plan of the International Association of Fire Chiefs will be followed in drafting the by-laws.

The first convention of the eastern section will be held in Philadelphia some time in October. The exact date will be determined by the Board of Directors.



Oh No—It Isn't Raining Rain

While Los Angeles, Cal., believes that there may be larger fire boats, they doubt if there is one that is more powerful than the boat recently added to the coast fire department. It is officially known as the "Los Angeles No. 2." It is only ninety-nine feet long, and the pumps are capable of discharging 12,000 gallons a minute out of the twenty-nine nozzles provided. The boat is operated by gasoline engines and is capable of acquiring a speed of seventeen miles an hour. Chief R. J. Scott helped in the design of the craft.

Chief Elling of Toledo, Ohio, Dead

Toledo, Ohio, is now honoring the memory of its hard-working chief, Louis H. Elling, who died on the eve of his retirement from the service. The chief had been troubled with asthma and heart trouble and he asked to be retired. His request was granted and he would have left the department on June 1, just eleven days after the day on which he died.

He was born in Toledo on March 17, 1858, and lived in that city his entire life. At the time of his death he was sixty-nine years old. His first job was that of helper to his father in the window shade and drapery business, and when he became twenty-one, he joined the fire department.

The Late Chief Louis H. Elling
Toledo, Ohio

At the time that he entered the service, there were forty-nine men in the department. In 1882 he was promoted to captain and eight years later was made second assistant chief. Ten years later he again advanced and was made first assistant chief in 1915. In the same year, he was made head of the department.

His greatest honor came to him in 1909 when he received the Brand Whitlock medal of merit. As soon as he became chief, he proceeded rapidly with the motorization of the department. It was finally completed a few years ago.

Chief Elling was off duty for two months in 1905 when he fell from a truck, and again in 1917 when he received a broken finger while fighting a fire.

At the time of his death, his wife and two firemen were with him. When he was stricken the men rushed to his home to give him artificial respiration and first aid, but their efforts were unsuccessful. He is survived by his wife, a brother, and two sisters in Cleveland.

Dominion Chiefs to Meet in Hull

Plans are being made for the nineteenth annual meeting of the Dominion Association of Fire Chiefs which will be held this year at Hull, Quebec, on July 25-28.

A large hall will be available for exhibit space. It is the intention of the board of directors to allot space in this hall free of charge to those wishing to exhibit apparatus or equipment which might interest fire chiefs. Chief Robert N. O. Harrington, second vice president of the association, whose address is 1456 Notre Dame Street East, Montreal, Canada, is in charge of the exhibit space allotment.

WITH THE EDITOR

Suspension for Non-Payment of Bills

It may, at first glance, seem arbitrary for the fire department to attempt to regulate the private life of its members. Arguments have been advanced to the effect that what a man does or fails to do in his private life has no connection with his duties as a fireman.

If fire-fighting were a private enterprise and the fireman the employee of a business concern this argument might hold good, but as it is he is in the service of his city or town, and even his private acts, in consequence, reflect upon the municipality. If the member performs a dishonest act, the public is very prone to visit his sins upon the department, and judge it accordingly.

In view of this fact, many fire departments, in their rules and regulations, take cognizance of the acts of their men outside of actual working hours, provided such acts reflect adversely upon the service. An instance of this is the action of a far-Western department in suspending three of its members on account of their failure to settle their private legitimate bills. One of these men had a record of eighteen years of service, but this fact availed him nothing in view of his offense. The rules of the department were very specific in this respect and left the chief no alternative in the matter.

Such a provision in the rules and regulations of the fire department is eminently just. If a fireman has the honor of his department at heart he will regulate his private conduct so as not to cast the slightest reproach upon it. And if he has not, then he should not be in the department.

This rule applies alike to the volunteer and paid forces, and any fire department whose regulations do not contain provisions of this nature might do well to incorporate them, with the proper penalties attached.

Classification According to Blood Types

The plan recently adopted by the New York Fire Department, at the suggestion of Dr. Harry M. Archer, honorary departmental surgeon, of classifying its members willing to volunteer for blood transfusion, into four blood types, should appeal to other large fire departments. This plan was adopted after Dr. Archer had appealed to the chief surgeon of the New York Police Department for help in the case of a fireman urgently in need of transfusion, when no professional blood donors were available.

Dr. Archer had been surprised at the promptness with which the police volunteers had responded. The police have a perfected system of classification by which members of the proper type were almost instantly available.

This led Dr. Archer, who is always on the alert for progressive ideas, to at once take steps to inaugurate a similar system in the fire department, and this plan is now under way.

It has many advantages, principal among which is the medical fact that only certain types of blood will properly transfuse, and that these types—four in number—only will produce good results when mixed with similar types in the patients involved. An incidental advantage in connection with the men volunteering is that the tests will enable the fire department surgeons to properly classify these members of the department as to the healthy condition of their blood and be better prepared to combat any tendency to disease or weakness among them.

If such a system were to become general throughout the large departments of the country, it would no doubt work very greatly to the advantage of the service. The system is well worth studying.

Brush Fires in Summer.

Each summer there are a series of epidemics of brush fires. These fires, instead of being mostly the result of carelessness of campers and trampers, are due, in many cases, to the wasteful custom of burning over fields or woodlots. This has often degenerated into the lazy man's way of cleaning up about the farm. When the practice falls on a windy day, it is a menace to the community.

The temptation to get rid of grass and leaves by burning is great. But it is false economy because of the local damage so often done. If the ground is very dry, the roots of the grass are. Also the seeds of useful plants are destroyed, and sometimes young trees and shrubs are so badly scorched as to be permanently injured. Burning leaves is wasteful of one of the most valuable soil tonics. Many Americans who complain of the poverty of their soil—especially those who have small garden plots—overlook the fact that if kept for a few years leaves form that richest and most useful plant food, leafmold. Although it is difficult to discourage this practice, it should not be hard to rouse people to the necessity of burning only on quiet days or in company with enough neighbors to prevent the spread of fire to other lots. Even in suburban communities commuters are careless and thoughtless about burning, and sometimes seem unaware of the real danger to which they expose their neighbors. Whatever the origin of field and brush fires, they constitute a menace with which most fire departments are well ac-

quainted. If fire departments are not of a size capable of handling brush fires around their cities or towns then salvation lies in preventing rather than extinguishing. A little publicity periodically through your local papers will go a long way toward checking these fires. If the public is not inclined to co-operate, then there is recourse to law, making it a misdemeanor to start such fires.

Honoring Four-Footed Veterans

It was a graceful and sentimental act that prompted the Society for the Prevention of Cruelty to Animals to suggest the placing at the foot of the firemen's monument in New York City a tablet commemorative of those four-footed veterans of the fire department—the fire horses.

Even the younger generation can remember the thrill that was produced by the sight of these faithful animals tearing through the streets, in answering fire alarms. In this utilitarian age, practical use must overshadow sentiment, and the horse-drawn, in the natural course of events, gave place to the faster and more efficient motor apparatus.

And yet, one cannot be blamed, when the motor apparatus roars along the street, for heaving a sigh and harking back in memory to the days, not so long past, when the magnificent charging steeds, with their manes flowing and their nostrils distended in eagerness to go faster, clattered along the highway.

They did their best in their dumb way to serve the city. All honor to the four-footed veterans of the past!

Exhibitors Lined Up for Convention

Two floors at the exhibit hall and one or more tents will be necessary to house the display of the manufacturers at the convention of the International Association of Fire Chiefs at Portland, Ore. The amount of space sold is the direct result of the activity of Chief Albert Herring of Murphysboro, Ill., chairman of the exhibit committee, and the other members who served with him. At the present time thirty-three firms have contracted for exhibit space.

Chief Albert Herring, Chairman of the Exhibit Committee

Jay Stevens, executive secretary of the association is well pleased with the results, and he has promised Chief Herring all the tents that will be necessary to house the displays. The one tent that is being arranged for now will be located on a street adjacent to the Auditorium. The tent will have plenty of light and will be completely equipped for the use of the exhibitors.

At first, Chief Herring had some difficulty in securing exhibitors because of the long time that would be normally required to move freight material to the coast. He has overcome this by having a special train leaving Chicago for Portland and conditions so arranged that the material will be discharged but four blocks from the convention hall. The entire trip from Chicago on this train will take seven days. There is no extra charge for this service. Mr. Herring will arrive early in Portland to assist the manufacturers in getting things in order for their exhibits.

While the following list is by no means the complete one, it contains the more prominent of those who have contracted for space at the coming convention in Portland:

Indian Motorcycle Co., Springfield, Mass.
Ahrens-Fox Fire Engine Co., Cincinnati, Ohio.
J. N. Hedberg Sons, San Jose, Calif.
Gamewell Co., Newton Upper Falls, Mass.
Foamite-Childs Corp., Utica, N. Y.
Eureka Fire Hose Mfg. Co., N. Y. C.
Kilsoot Chemical Co., N. Y. C.
Mine Safety Appliance Co., Pittsburgh, Pa.
Wheeler-Schebler Carburetor Co., Indianapolis, Ind.
American-LaFrance Fire Engine Co., Elmira, N. Y.
American Steam Pump Co., Battle Creek, Mich.
Seagrave Corp., Columbus, Ohio.
Siracode Signal Corp., San Francisco, Calif.
M. Greenberge Sons, San Francisco, Calif.
International Motor Co., N. Y. C.
Eeer Safe Voltage Tons Co., San Francisco, Calif.
Wallace Macgregor, Berkeley, Calif.
Eastman Bros., Silverton, Ore.
Johns Manville Corp, N. Y. C.
Munnell & Sherrill, Portland, Ore.
C. A. M. Mfg. Co., San Francisco, Calif.
Kohler Co., Kohler, Wis.
American Rubber Co., Oakland, Calif.
The Morkrum-Kleinschmidt Corp., Chicago, Ill.
S. & M. Lamp Co., Los Angeles, Calif.
Rensselaer Valve Co., Troy, N. Y.
General Fire Equipment Co., Portland, Ore.
B. & M. Mfg. Co., Los Angeles, Calif.
Capt. A. L. Sherk, Portland, Ore.
The Phister Mfg. Co., Cincinnati, Ohio.
Guarantee Liquid Measure Co., Rochester, Pa.
Equipment Sales Corp., Los Angeles, Calif.
FIRE ENGINEERING, N. Y. C.

Chief Randall of Duluth, Dead

Joseph Randall, chief of the fire department of Duluth, Minn., for eighteen years, died as the result of heart disease after a seven months' period of illness. Since his illness he has not been on active duty, and during his absence, the department was in charge of Assistant Chief S. H. Hanson.

The Late Chief Randall

He was born on May 6, 1864, in Inerkip, Ont., and when he was nineteen years old,he accompanied his parents when they moved to Duluth. His first job in Duluth was to drive one of the old horse cars. This was his job for four years.

Chief Randall joined the fire department on December 1, 1886, as a hoseman. He was promoted to captain in 1891, and in 1893 he was made assistant chief. His final promotion came in 1909. He was a member of the Duluth department for forty years.

Chief Randall was one of the pioneer fire-fighters in the Northwest section about Duluth. Few of the members of the department who were in service at the time when Randall joined the service are still living.

On December 1, in commemoration of his anniversary, the members of the department presented him with a fine radio set, and a special program in his honor was broadcasted from station WEBC.

Chief Randall is survived by his widow, one son and one daughter. He was a member of the Masons, Elks and Rotary Club.

Chicago Urges 20-Day Furlough—The aldermen of Chicago are urging a twenty-day furlough for the firemen during the summer months. Firemen work on twenty-four-hour shifts, and it is felt that they are thereby entitled to longer vacations.

Chicago to Have New Examination—The civil service commission of Chicago has cancelled the present eligible list and has called for a new examination on June 13. The cancelled list dates from 1924.

Oklahoma City Adopts Gray Uniform Shirt—The Oklahoma City, Okla., department has adopted the gray shirt as part of the standard uniform. Outfits in the department have undergone a number of changes during the past few years. This is the first time that a standard shirt has been chosen.

QUESTIONS AND ANSWERS

Conducted by FRED SHEPPERD, B. Sc., M. E.

"He that questioneth much shall learn much"—BACON

NOTE—Readers of FIRE ENGINEERING are invited to send in questions, which will be answered in the order received. Names are omitted from questions unless otherwise specified.

"False & True" Questions and Answers

In answering questions of the "False and True" type the candidate is permitted only to use the word "False" or "True." No explanation whatsoever is permitted. Bear in mind where a question asks whether a certain statement is false or true that if there is one where a deviation might be made, then the answer is dependent upon this one deviation. For instance with the following statement:

"A water tower is always used for high fires."

This statement should be answered false for it is easy to assume a fire occurring in a building beyond the reach of the water tower stream—hence the water tower would not be used in this case and the statement would be false. Also, a fire might occur on the inner court of a building where it would be out of reach of the water tower stream and the water tower would not be used. Again the statement would be false.

The following are some questions of the false and true type with the statement "false" or "true." Explanations following the answers should never be given in examinations for the candidate is, as noted above, required to state either of the two words "false" or "true" and nothing else in answering the questions.

Question: In fighting marine fires it is best to remove the cargo from the lower decks first.

Answer: False.

Question: When it is necessary to flood a compartment in the hold of a ship, when on fire, the bulkhead doors should be opened.

Answer: False.

Question: Where the hatches on a ship which is burning cannot be opened, water can be gotten into the burning compartment by sending it through ventilator leading to that compartment.

Answer: True.

Question: If it is necessary to sink a burning ship, it should be let down on a rocky bottom if possible.

Answer: False.

Question: A solid side ladder with hooks should be used for boarding a steam ship alongside a fire boat.

Answer: True.

Question: Three-way siamese connections are never used in fighting ship fires.

Answer: False.

Question: In cutting electric wires with a wire cutter both wires should be cut at the same time.

Answer: False.

Question: Before opening up with a battering ram a line should be ready and at hand.

Answer: True.

Question: Siamesed lines have no advantage over single lines at fires.

Answer: False.

Comment: Running parallel lines and siamesing them into a single nozzle has a distinct advantage over laying a single line of the same size of hose and equipped with the same size nozzle. By stretching two lines the rate of flow through each line is decreased by cutting down the friction loss. By thus reducing the friction loss there is more pressure available at the nozzle.

Question: When using the life gun, it should be aimed at the point to which the life line is to be sent.

Answer: False.

Question: The Bresnan Distributor has a total nozzle area equal approximately to that of a 1½-inch nozzle. In view of this the range of streams from a Bresnan Distributor would be greater than from a cellar pipe equipped with a 1¼-inch nozzle.

Answer: False.

The reason for this statement being false is that with a Bresnan Distributor having such a large area the flow through the line of hose feeding it reduces the pressure far more than the flow from the nozzle on the cellar pipe would reduce it. Furthermore, the cellar pipe is equipped with a regular tip giving the stream a much greater range than would the small opening in the Bresnan Distributor.

Question: In holding a life net the net should be held at the level of the chin.

Answer: True.

Question: When operating a stream from a wagon pipe the greatest effectiveness can be secured by directing the stream at an angle of 80 degrees with the street.

Answer: False.

Question: In operating on a fire within a building streams should not be so directed as to strike the ceiling.

Answer: False.

Question: The greatest range can be secured from a cellar pipe if it is operated at a high angle.

Answer: False.

Question: Streams from a water tower are most effective when operating on a fire from 100 to 125 feet above street level.

Answer: False.

Comment: The maximum effectiveness of water streams is secured when the fire is from 65 to 85 feet above street level. This is on the assumption that the tower is placed a distance of 35 feet from building.

Question: Wet pipe sprinkler systems are more suitable for use in pier sheds than are dry valve sprinkler systems.

Answer: False.

Question: Combustible materials saturated with vegetable oils are more susceptible to spontaneous ignition than are the same materials saturated with mineral oils.

Answer: True.

Comment: Vegetable oils include linseed oil, palm oil, rape seed oil, cottonseed oil, castor oil, olive oil, lemon oil, banana oil, and turpentine. Mineral oils include crude oil from oil wells and all products made from it which would include lubricating oil, kerosene, gasoline, benzine, etc.

Question: Small quantities of water are effective in handling fires in lime storage houses.

Answer: False.

Question: Coal piles when wetted are not subject to spontaneous ignition.

Answer: False.

Comment: The addition of water or moisture to a pile of coal increases the likelihood of spontaneous ignition through furnishing within the water oxygen necessary for the chemical reaction which takes place within the pile. Damp coal is far more subject to spontaneous ignition than is perfectly dry coal.

Question: Spontaneous ignition in coal piles can be prevented by piling the coal to great depths.

Answer: False.

Comment: The deeper the pile of coal is made the more the heat which is generated within it is retained and the quicker will spontaneous ignition take place.

Question: Thorough ventilation will prevent coal fires from spontaneous ignition.

Answer: True.

Comment: The function of thorough ventilation in this case is to keep the temperature down by carrying off the heat as fast as it is created by the chemical reaction. This process of carrying away the heat as it is formed keeps the temperature of the coal pile down to a point below the ignition point of the coal.

Question: There is little danger to men operating at a fire from fumes of nitric acid as long as the men do not come in direct contact with the acid itself.

Answer: False.

Comment: Nitric acid fumes when inhaled are extremely dangerous to life. Many instances are on record where firemen have been killed from inhaling nitric acid fumes.

Question: The soda and acid extinguisher is the most effective for use on electrical fires.

Answer: False.

Comment: Carbon tetrachloride extinguisher (the fluid being a non-conductor) is most effective and safe for use on electrical fires. A mixture of soda with water makes a comparatively high conductor of electricity.

Question: It is dangerous practice to use water streams in ammonia refrigerating plant fires.

Answer: False.

Comment: Water is one of the best agents to employ in refrigerator plant fires where ammonia is present. The water

absorbs tremendous quantities of the ammonia gas and at the same time it cools the piping equipment and tank containing the ammonia vapor down so as to reduce the pressure therein.

Question: In operating around industrial plant fires it is good practice to use only fire department ladders.

Answer: True.

Comment: Ladders found around industrial plants may be insecure for use by fire departments. Accidents have occurred through fire departments employing ladders found around such plants; a specific case of such occurred at Pittsburgh where seven firemen lost their lives when an industrial plant brigade ladder was used when operating over an oil tank.

Question: In fighting fires in varnish vats the use of water streams is very effective.

Answer: False.

Comment: Not only is the use of water ineffective on such a fire but it is dangerous, for water thrown into a varnish vat sinks to the bottom, causing the varnish to overflow and in this manner fire may be spread in all directions. Furthermore the water entering the vats when they are at a high temperature such as are encountered at a fire, is rapidly vaporized throwing the varnish in all directions. This, too, is likely to spread the fire and possibly injure men operating near the vats.

Question: In relieving floors of water, cut the drain holes near the center of aisles.

Answer: False.

Comment: Such drain holes should be cut along the wall or along the sides of aisles. Otherwise men walking through the aisles may fall through the holes.

Paid Men and Volunteer Officers

To the Editor:

The Fire Commissioners of our city have had introduced in the City Council a bill creating the offices of Deputy Chiefs, Captains and Lieutenants in the Fire Department. This bill has passed the council and is now before the Mayor for his approval or disapproval.

The Fire Department has insteadily increased the number of men in the department until today the paid uniform force consists of a Chief, a Deputy Chief and ninety-one members, operating on a two platoon system in six stations. In active service are six engine companies and three truck companies, while in reserve are two engine and three hose wagons. The volunteer force consists of about eighty members distributed among six volunteer companies. The volunteer members have not answered a first alarm assignment in two and one-half years. They have raised considerable opposition to the creation of these offices in the paid department, mainly because they now elect Captains and Lieutenants in the volunteer rank who are, according to Rules and Regulations of the Department, the immediate superiors of the paid uniformed force, excepting the Chief and Deputy Chief.

The Chief of our department is a very capable man, and through his instruction has brought the uniformed force to a high state of efficiency.

About 75% of the men on the uniformed force are men under the age of thirty years and have applied themselves to study in an effort to attain the highest rank possible.

As this bill is to have a public hearing we would appreciate receiving whatever data you may be able to give us showing that it is desirable of having the officers of the department selected from the ranks; also, that the volunteer section of the department should not be carried on under the present practices.

Your early reply will be appreciated.

W. B. A.

Answer. You ask for an unbiased opinion as to having volunteer officers in charge of companies in a part paid department, particularly where conditions will make it such that these volunteer officers will have command over paid firemen in the event of fire.

Let me sketch out first briefly the make-up and functioning of a typical successful fire department. The department consists of a chief, two assistant chiefs, several battalion chiefs, captains and lieutenants.

All men are paid men with the exception of volunteers who may be called on in the event of a large fire.

The chief, assistant chief, and battalion chief have been promoted from the ranks by examination, and are fitted to take command at all times.

The captains and lieutenants have been developed, through experience and through instruction at the fire department school, into capable officers.

Not only are they able to command the men in their companies but they are able to instruct them as well.

Here is the result. Men in the company, knowing that their company officers are fitted for the "positions," have great respect for them and are willing to take instructions from them. It is never necessary for the captain or lieutenant to ask opinions or advice from men under them. Nor is it necessary for them to let the men go ahead and perform work without directing them to do it.

Now suppose that volunteer officers were elected to command the companies. Suppose further that fire occurred. These volunteer officers would have command of paid men who in many instances would have more experience and be far more capable of operating at a fire than would the officers themselves.

They would be very reluctant to take commands from the volunteer officers, particularly when the men themselves had a wider range of experience in handling of fires.

This reluctance to take commands from the company officer would seriously interfere with proper discipline.

From the standpoint of the volunteer officer, he would often hesitate to give orders which he himself would not be absolutely certain were the best orders to give.

As far as the general administration of discipline in the department is concerned the presence of volunteer officers in various companies would seriously interfere with discipline. Unless the chief of the department and his sub-ordinate chief officers had absolute power to control the actions of the company officers, discipline could not be maintained. And it is not hard to imagine the officer of a volunteer company, having nothing at stake but his rank (no compensation being received) would hesitate to take orders, which would prove distasteful to him, from a superior.

The writer believes that to permit volunteer company officers to be in command of paid men at any time would impair the discipline of the department. It would check the development of the department through not providing the men in the companies with officers who had the experience and training to properly instruct their subordinates.

Where a man receives his livelihood from the department he is going to prize his position far more highly and going to submit to discipline more readily than where he is holding the position more as a hobby than anything else. And this holds particularly insofar as company officers in fire departments are concerned.

If your department wishes higher efficiency in the future, and better discipline, as well as more thorough instruction of the men in their work, every effort should be made to abolish volunteer officers in charge of companies wherein, sooner or later, there may be paid men. Even though these volunteer officers were in command of volunteer companies, their presence at a fire where they may have to take charge of paid men affords a weakness which must not be discounted.

Fire fighting is not like many of the sciences which can be learned out of books. It requires actual experience to make a fire fighter. The man who is engaged in work elsewhere than in the fire department and just devotes his leisure time to fire department affairs cannot be expected to be fitted to take command of men in fighting fire, nor can he be expected to properly direct the forces at fires.

Chief Carter Fights Arson Case

Due to the activities of Chief Peter Carter of Collingswood, N. J., who was asked to inspect the fire ruins of a home in Pensauken, a man was convicted of setting fire to his own home in order to collect $15,000 insurance.

Chief Carter found evidence pointing to a strong arson case. A carpet runner in the dining room was oil soaked, and liquid found in the drain pipes had a strong oil odor. Evidence pointed to four fires burning independently in various parts of the house. Chief Benjamin D. Welch of Woodland, N. J., and an investigator of the National Board of Fire Underwriters helped in preparing the case for court trial.

Before becoming chief in Collingswood, Chief Peter Carter was chief of Camden, N. J., fire department until his retirement. He is and has been an officer in the International Association of Fire Chiefs for many years.

Chief Kennedy Well Pleased With Badge

Chief John B. Kennedy of Augusta, Ga., is well pleased with the gold badge that was presented to him by the members of his department and the Civil Service Commission. The token was made by the C. G. Braxmar Company of New York city. Rumors have it that another official of the department will be presented with a badge somewhat similar in the near future.

Valley Heights, Pa., Installs Siren—An electric siren has been installed in Valley Heights, Pa.

Shenandoah, Pa., to Turn Over Funds—The amount of money on hand in the firemen's relief fund of Shenandoah, Pa., has accumulated to such an extent that the firemen will turn over the moneys to some trust fund.

CARELESSNESS AND DELAYED ALARM RESULT IN BIG TWO-ALARM BLAZE

State Printery at Harrisburg, Pa., Badly Damaged by Garage Fire Adjoining—Backfire, Combined with Carelessness in Garage Housekeeping, Cause

A FIRE caused by careless housekeeping in a garage caused heavy damage at Harrisburg, Pa., on May 7, destroying the garage and damaging badly two floors of the State Printing Office house in a four-story building adjoining. Two men, one a fireman, also lost their lives in this blaze.

The fire originated on the second floor of the Felton Garage, from the backfire of an automobile, at 8:45 p. m., but owing to efforts to extinguish the blaze by the owner and employees of the garage and the delay in reaching the watchman of the printery, the alarm was not sent in until from 15 to 18 minutes later, allowing the fire to gain great headway.

When the first alarm companies arrived, the entire garage was involved and one third of the third floor and one half of the fourth floor of the printery were burning. Chief M. M. Tawney at once sent in a second alarm, bringing one 750-gal. Ahrens-Fox, two 750-gal. Seagrave and one 1,000 and two 750-gal. American-LaFrance pumpers; two Amoskeag and one Metropolitan

The Damaged Buildings After the Blaze in the Garage and State Printery at Harrisburg, Pa.

steamers. There were approximately 175 men in service, and twelve hydrants, of 6" single suction with two plug 2½", were available, spaced about 150 feet apart, and with pressures ranging from 50 to 90 pounds.

Four hydrants and 21 engine streams were thrown, with nozzles of 1 to 1½". Some 12,000 feet of hose were laid, and the water mains supplying the hydrants were respectively 6" and 20".

In describing the difficulties encountered by the department in fighting this fire and the cause of the death of the two men who perished in the flames, Chief Tawney writes:

"The fire started in the Felton Garage, next building to the State Printing Office, caused by a backfire from an automobile spreading to the vacuum tank which exploded and threw the gasoline over the dirty rags, oil and grease that were in great numbers in this garage, due to the carelessness of the owner and employees. Incidentally the writer had inspected this garage several times and each time the condition was very bad. This garage is owned and operated mostly by negroes.

"On the afternoon of the same day of the fire there were placed in this garage two tanks of oxygen. When the fire occurred the employees emptied three 2½-gal. fire extinguishers before an attempt was made to send in the alarm. When the fire got beyond their control they went to the entrance of the State Printing Office and knocked on the door for the watchman to send in an alarm from the auxiliary box in the State Printing Office connected with fire alarm box No. 191. It was necessary for them to wait until the watchman came from the fourth floor of the building—then the alarm was transmitted.

"The fire then had been burning at least fifteen minutes because the flames were coming out of the roof of the garage and licking the unprotected windows of the State Printery before the alarm was sounded. At least two companies were started out of the door of the fire house when the alarm started to ring. Persons had reported the light in the sky. Apparatus was greatly hindered in reaching the fire on account of a great many automobiles blocking the way.

"The men who were killed had entered the building before the firemen arrived, or at least one of them, Mr. Goodyear, had done so. He entered the building with the watchman after the alarm was sent in and he and the watchman went to the third floor, Fireman Goodyear taking the nozzle from the rack of the standpipe and the water turned on by the watchman. The watchman told me that he could not stand the smoke and left the building, calling for Mr. Goodyear, but received no reply. This he did not tell until Monday evening, May 9. How the second man entered the building is still a mystery. His death came from being overcome by smoke. No person knew of his being in the building until he was found at three o'clock on the morning of May 8.

"The men of the Harrisburg Fire Department deserve the greatest amount of credit that can be given them for the manner in which they worked during the fire and the untiring efforts that were given until the recovery of the comrade, Bernard Goodyear. No person could give any information about him other than that obtained from his wife, which was that he went to the fire and had not come home. Arriving at the fire before the fire department, he was not seen by any firemen and had not reported to the foreman of his company, which leads us to believe that he was overcome immediately upon entering the building and later burned. In order that the body of Mr. Goodyear be found it was necessary to move tons and tons of paper that was in book and pamphlet form stored in the Division of Documents of the Commonwealth of Pennsylvania.

"The work of the firemen was hampered somewhat due to the fact that the main feed wires of the Harrisburg Electric Company serving the city were not cut, due to the fact that hospitals would have been left in darkness and they refused to cut the wires for the city electrician.

The pumpers and steamers at the fire worked well.

"The report that the State Printery Building was fireproof is false. The floors are of wood, except part of the first floor which is concrete. The girders and all steel are unprotected and there is no wired glass in the building.

"In my opinion this fire was caused directly by the carelessness of the owner and employees of the Felton Garage. The State Printery being next door, built up against the garage, with unprotected windows was a fuel for the flames that had gained such headway from the delay of the employees of the garage turning in the fire alarm.

"As to losses, this information cannot be given at this time. The writer was in touch with the owner a few minutes ago while writing the letter and they will be unable to give that information for a couple of weeks. While the newspapers gave the loss at over a million dollars, it was not correct. For instance they placed the loss to the Commonwealth of Pennsylvania at over $500,000 while the actual loss is less than $200,000. This information comes from the secretary of property and supplies of the commonwealth who has direct charge of the division of documents. This will give you an idea of the exaggeration. Another thing, the expensive machinery of the State Printery was on the first floor and not a bit of fire reached the first floor. There was some water damage but that was in the way of rust on machinery which can easily be cleared up.

"There was very little fire on the second floor and that only in the one end of the building and the bindery machinery on that floor was only damaged by water."

Fireman Killed in Institution Fire

One fireman, a member of Chemical Company No. 2, was killed while fighting a fire in the Ramsay County Preventorium, a home for tubercular children located six miles outside of the city limits of St. Paul.

A request was made to St. Paul for assistance and the chemical company together with Ladder Company No. 9 and Squad Company No. 2 was sent.

The fireman who was killed was in the upper part of the building salvaging the children's beds, and it is believed that he worked there until he could stand the heat no longer. Either he lost his way or else was caught in a back draft for he was seen walking out onto an upper porch where there was a raised ladder. He emerged both arms extended like a fiery cross, and then he walked off of the porch. Firemen rushed to him to extinguish his burning clothing.

Both his eyes were practically burned out, and the flesh on his arms was burnt to the bone. When the men tried to remove his helmet part of his scalp went with it.

He asked for a cigarette, and it was given him. He tried to inhale the tobacco smoke but couldn't. His lungs were gone. He turned to his comrades and whispered, "Boys, I'm through."

His funeral was the most impressive held in the city. As the body was being brought to its final resting place, the bells in the stations tapped fifteen times to mark the end of his fifteen years' service.

WHAT'S BURNING

THE following list includes fires of $25,000 loss and over in the United States and Canada, for the periods designated in the headings. These figures, compiled from telegraphic reports, are based on estimates made at the time, and are subject to later investigation and consequent revision. Taken as a whole, however, they give an approximately correct view of the losses incurred. The figures represent loss in thousands.

Week Ending June 3

CHLORIDE, ARIZ.—Portion of business district destroyed.... 80
LONG BEACH, CAL.—Derrick and equipment, Alimitos Heights field 40
HANFORD, CAL.—Vast farming area destroyed..... 1600
BESSEMER, ALA.—Plant of Royster Guano Acid Co..... 170
SUMTER, S. C.—Dwellings and garage destroyed..... 25
GALVESTON, TEX.—Crystal Hotel damaged..... 25
HAMILTON, O.—Robinson-Schwenn Dept. store damaged..... 40
ANDERSON, S. C.—Townsend Twine Co.'s plant..... 25
WINTON, N. C.—Plant of Herring & Beale..... 25
WARREN, O.—High Street Market House damaged..... 40
FREDERICKSON, WASH.—Mill of Foster-Newbegin Co..... 90
MAIDSTONE, SASK.—Business establishment damages..... 50
DENMARK, S. C.—Palmetto Lumber Co. and adjoining property 65
BOSTON, MASS.—Boston Floating Hospital and adjoining piers 200
OLNEY, TEX.—Warehouse of Humble Pipe Line Co..... 25
MONROE, LA.—Part of plant of Louisiana Central Lumber Co. 800
NEW KENSINGTON, PA.—Willys-Knight Garage damaged.... 70
DELPHI, IND.—Residence of G. M. Gregg destroyed..... 40
SCRANTON, PA.—Green Ridge Baptist Church damaged..... 65

Week Ending June 10, 1927

SEARCY, ARK.—Business establishments damaged..... 40
NORH ADAMS, MASS.—Tenement and adjoining property..... 25
MONROE, MICH.—Baled straw of Raisin River Paper Co..... 25
ASBURY PARK, N. J.—Arcade Pier destroyed..... 170
EASTON, PA.—Wise Lumber and Bangor Elec. Co. destroyed.. 250
WRIGHTVILLE SOUND, N. C.—Babies Hospital..... 30
McCOO, MISS.—Three business establishments damaged..... 55
CULLMAN, ALA.—Warehouse of J. Mackentepe..... 25
STERLING, MASS.—E. R. Buch Chair Shop damaged..... 65
CAMP HILL, ALA.—Ferguson & Land Store damaged..... 35
SPRINGFIELD, O.—Plant of Hodge Storage & Cartage Co.... 180
WATERBURY, CONN.—Fazio dwelling at 1694 N. Main St.... 25
NEW ORLEANS, LA.—Macaroni factory, Charles & St. Philips St..... 80
BROWNSVILLE, ME.—U. S. Pegwood & Shank Co. and adj. property 45
UMATILLA, FLA.—Apartment hotel owned by Ira Rice..... 25
BELCHER, LA.—T. & P. R. R. Station and adj. property.... 35
GULFPORT, MISS.—Dept. store of C. & J. Farmer..... 35
HUBBARD, TEX.—Business establishments damaged..... 35
RIDGEWOOD, N. J.—Monroe Street Public School..... 200
NESTORVILLE, ONT.—Sawmill of J. J. McFadden destroyed.. 250
UNION CITY, N. J.—Manhattan bldg. and adj. property..... 400
FOLKSTON, GA.—Arnold Hotel building..... 40
COLUMBUS, S. C.—Minnaugh's Dept. Store & adj. property... 30
SOUTH ATTLEBORO, MASS.—Property of Citizens Ice Co., Pawtucket 40
ALLENTOWN, PA.—P. C. Martin store and adj. property..... 30
STROUDSBURG, PA.—Highland Dell destroyed..... 80
WYNCOTE, PA.—Residence of J. H. Hunsberger..... 40
CHICAGO, ILL.—Property occupied by Automobile Equipment Mfg. Co. 80
DURHAM, N. Y.—Summer residence of C. E. Barber..... 25
LOS ANGELES, CAL.—American Glue Co. plant and others.. 80
DUNNINGAN, CAL.—D. N. Hershey estate and adj. property.. 25
CLYDE, N. Y.—Burke Bros. warehouse damaged..... 25
WALTHAM, MASS.—St. James Catholic Church..... 80
HUNTINGTON, IND.—Car barns of Indiana Service Corp.... 25
BOWIE, MD.—Grandstand and club house at race track..... 80
CHICAGO, ILL.—Plant of Eagle Fire Works Company..... 50
INTERLAKEN, N. Y.—Packing plant of J. Marion, Ithaca..... 30
PROVO, UTAH.—Provo Taxi Company and adjoining property. 30
GREENVILLE, FLA.—Mason & West Planning Mill damaged.. 70
PORTLAND, ORE.—Block between Salmon, Main, Front & River 80
ABERDEEN, WASH.—City of Nome, J. J. Moore Company.... 170
NEW BEDFORD, MASS.—Plant of New Bedford Vocational School 175
GRAND RAPIDS, MICH.—Bolhuis Lumber & Mfg. Co., yards. 45
KIRLAND LAKE, ONT.—Reamsbotton & Edwards Dept. Store. 25
TORONTO, ONT.—Business property at 117 King St..... 35
BOGOTVILLE, QUE.—Dock and sheds destroyed..... 40
PITTSBURG, CAL.—Garage and factory building destroyed.. 50
SAN PEDRO, CAL.—Property of Union Oil Company damaged. 80
ATHENS, GA.—S. E. Cotton Compress & Warehouse Co..... 100
RICHMOND, MO.—Richmond Produce Co. and adj. property. 25
FREEPORT, TEX.—Staufeur Chemical Co. sulphur plant..... 80

Springfield, Ill., Chief Has New Car—The chief of Springfield, Ill., now has a new roadster in which to answer fire alarms.

Schenectady, N. Y., Has Not Awarded Contract—Contract for the construction of a new fire station in Schenectady, N. Y., has not been awarded because no money has been appropriated by the council for the work. There is still some discussion over the architect's plan for the building.

Hutson Speaks at Kiwanis Club—A. C. Hutson, assistant chief engineer of the National Board of Fire Underwriters, addressed the luncheon meeting of the Kiwanis Club at East Orange, N. J., and stressed the importance of an agreement among the fire departments of the community whereby one would aid the other in time of need.

ARRANGEMENTS COMPLETE FOR NEW ENGLAND CHIEFS' CONVENTION

Interesting Program of Speakers Prepared—Registration to be in Charge of Box 52 Association—Crowd Expected

By HARRY BELKNAP

ALL arrangements have been completed for the fifth annual convention of the New England Association of Fire Chiefs which will be held in Portland, Me., on June 21, 22, and 23.

Chief Charles H. French, of Manchester, N. H., president, and Chief John W. O'Hearn, of Watertown, secretary-treasurer, have worked hard to assure an attractive program.

The exhibits of apparatus and fire department supplies will be very complete. Chief William H. Hawkins, of Haverhill, Mass., is chairman of the exhibit committee.

Transportation and hotel arrangements are in charge of George F. Cobb, 774 Albany Street, Boston, while Chief Oliver T. Sanborn, of Portland, will provide entertainment for the visiting chiefs.

The roads to the north from Boston are in excellent condition and a large part of the distance is over a newly built macadamized state highway. Many of the chiefs are planning to motor up to Portland for the convention. Others will go by steamer from Boston or New York or by train over the Boston and Maine Railway from the North Station in Boston.

Registration at the convention will be handled by George W. Austin, Herbert K. Pratt, and P. Hildreth Parker, of the Box 52 Association of Boston, the same committee that was in charge of this work for the past two conventions.

The following is the program of the convention.

Tuesday, June 21

8 A.M. Registration.
9 A.M. Opening of Convention by President French.
Address of Welcome by Hon. Philip J. Deering, President of the City Council of Portland.
Address by Chief Oliver T. Sanborn, of the Portland Fire Department.
Address by Governor Brewster, of Maine.
Response to address of Welcome by Chief John C. Moran, of Hartford, Conn.
Memorial Service.
Selections by Quartet.
Prayer and Address by the Rev. Henry Stiles Bradley.
Afternoon—Visits to exhibits of apparatus, etc., in the Exposition Building—demonstrations and tests.
Evening—Round Table Discussion and Question Box.
Paper: "The Proper Tire Equipment for Fire Apparatus."
Paper: "Lubrication of Motor Fire Apparatus."
Reports of Committees. Appointment of Committees.

Wednesday, June 22

Morning Session—
Paper: "Ventilation" by District Chief E. W. Williams, of Lynn, Mass.
Paper: "Traffic Problems" by Deputy Police Supt. Thomas F. Goode, of Boston, Mass.
Paper: "Handling the Distant Fire with Relay Lines," by Fred Shepperd, Managing Editor, FIRE ENGINEERING.
Paper: "Progress in Standardization of Fire Hose Threads," by P. E. Charnock, Engineer of the New England Insurance Exchange.
Paper: "The Use of Phantom Fire Alarm Boxes," by W. J. Carroll, of The Gamewell Company.

Thursday, June 23

Morning Session—
Address by Chief John P. Crowe, Assistant Fire Warden, Massachusetts Department of Conservation.
Address by Jay W. Stevens, Executive Secretary of the International Association of Fire Chiefs.
Address on "General Fire Fighting," by Deputy Chief Thomas S. Dougherty, of the New York Fire College.
Address by Percy Pugbee, field engineer of the National Fire Protection Association.
Unfinished Business.
Election of Officers.
Adjournment.

N. Canaan, Conn., to Erect Fire Station—A brick fire station is to be erected in North Canaan, Conn.

Fire Department Organized in Woodsfield, O.—Members of the American Legion Post in Woodsfield, Ohio, have organized a volunteer fire department.

Topeka Re-Appoints Chief Waidelich

The mayor of Topeka, Kans., has recently re-appointed Chief Joseph Waidelich as fire marshal.

Chief Joseph Waidelich

All of the insurance companies in the city and the Kansas Inspection Bureau are highly elated over the wisdom of the mayor in maintaining so efficient a fire officer. Mr. Waidelich entered the Topeka fire department as a fireman on March 9, 1896. He became building inspector on May 11, 1914, and promoted to assistant chief on July 15, 1915. After the death of Chief Joseph Hanlon, on May 25, 1925, Mr. Waidelich was appointed fire marshal on June 2, 1925.

He is active in the Kansas Fire Chiefs' Association, and the Kansas Firemen's Association. His qualifications as fire marshal and building inspector are well known to those who have had an opportunity to work with him.

Mr. Waidelich is also greatly interested in the affairs of the International Association of Fire Chiefs, and all matters appertaining to the advancement of the art of fire-fighting and fire prevention.

The city has just signed contract with the Gamewell Company for the installation of new central office fire alarm equipment.

NEW YORK CLASSIFIES FIREMEN ACCORDING TO FOUR BLOOD TYPES

Plan Arranged So That Blood Donors Can Be Found Instantly Should Emergency Occur—Similar Plan Used by Police Force

By WILLIAM JEROME DALY

THE New York Fire Department is now engaged in classifying the firemen according to blood types of which there are four. The purpose of making the classification is to record by types those members between twenty-three and twenty-eight years of age, excepting officers and company chauffeurs, who would be willing to volunteer the use of their blood for transfusion to comrades in need of blood as a means for saving their lives in cases of illness or injury.

The work is being carried on by Chief Medical Officer Joseph E. Smith. At this writing it is not known how many firemen have passed the required tests, but it is safe to predict that hundreds will be available and then listed by types, with residence address, telephone number, etc., all recorded for instantaneous action in case of emergency.

The police department of New York has such an arrangement now. The plan is one which was recommended two years ago by the National Association of Police and Fire Surgeons at the annual convention held in Grand Rapids, Mich., during the regime of Dr. Harry M. Archer as president. Dr. Archer is an honorary medical officer of the New York Fire Department.

Recently when a New York fireman was in need of blood and professional blood donors were not available, or such of them as who were available had been too recently used, Dr. Archer, who had the case, asked Dr. Daniel J. Donovan, Chief Surgeon of the New York Police Department for help.

Dr. Donovan, who is now the president of the Police and Fire Surgeons Association, had a motor cycle policeman at the door of Bellevue Hospital in fifteen minutes. Dr. Archer had told him the particular blood type the fireman was. Dr. Donovan was able to place his finger on a policeman of that required type. Twenty minutes later three other policemen reported to Dr. Archer at Bellevue for transfusion.

Dr. Archer made this the subject of an official communication to Chief Surgeon Smith. It was decided that if the police department can meet such a situation, so can the fire department—hence the recent order calling for volunteers.

To the average person, blood transfusion is just blood transfusion, but there is more to it than that. The four types are known by numbers from one to four inclusive and the determining factor in identifying a particular type of blood is the amount of iron in the blood. According to the amount of iron the particular type is known and classified.

The type of blood contained in the veins of a donor must be identical with the type of blood of the recipient if the transfusion is to be fruitful. The types must blend. It is just a step in the direction of criminal negligence to mix the types. The "bugs" in the blood fight, and there is continual strife when different types meet—they just will not mix and the patient is the loser.

The Firemen's Emergency Fund which is administered by a board representing each rank of the service in conjunction with some of the honorary chiefs has expended considerable sums of money in payment for blood transfused from professional donors. There is an exchange or clearing house in New York where professional blood donors can be procured.

Another feature of the blood typing survey which will serve the uses of the department and the individual as well is the fact that the typing will disclose to some men just what type they are and whether or not they have at any time in the past been victims of blood disorders or diseases.

New York firemen are not periodically examined, excepting members of the Rescue Company. If a fireman is not hurt or ill, he can go on indefinitely without an official examination. He is examined upon entering the department of course, but after his probation period has been served, he goes on for years without another examination.

Sentiment on the question of periodic medical examinations is widely divided. There are those who recognize in periodic examinations a means for discovering and arresting ailments in their incipient stage and possibly preventing chronic conditions from setting in. There are other, however, who would rather not be appraised of any ailment so long as they can carry on from day to day. The veterans in the service are against it too. They do not want to be shocked with information concerning their condition, on the premises that what they do not know will not give them a headache.

Grounds Groomed as Protection Against Fire in Oil Fields

Every kind of precaution is taken to safeguard against fire in the oil fields. In the Torrence Field, owned by the California Petroleum Company, they have a disc-wheel arrangement drawn by a caterpillar tractor to cut under the grass and weeds which might spread fire in case such an accident did occur. The discs are weighted down by a roll of cable.

CHARLES W. GEIGER.

Imlay, Mich., Orders Pumper—Imlay, Mich., will receive a new pumper about July 1.

Portland, Ore., Suspends Three Firemen—Three members of the Portland, Ore., department have been suspended because of failure to pay legitimate bills. This constitutes a violation of the department's rules. One of the members suspended has been in the service eighteen years.

OF INTEREST TO VOLUNTEER FIRE DEPARTMENTS

DEFECTIVE ELECTRIC WIRING AND APPLIANCES CAUSE MANY FIRES

Disregard of Good Wiring Practice Held Responsible—Improper Use of Drop Cord is Large Contributing Factor in Losses

By H. N. WALKER
Deputy Fire Marshal, Pierre, S. D.

MANY fires are caused by defective electric wiring or improper installation of electrical devices. It is a well known fact that electricity is the safest and best means of transmitting light, heat and power, if properly installed, and the most dangerous and hazardous, if defective.

Connected with the duties of fire marshal, I have had an opportunity to observe electric wiring and devices in various forms, good, bad and very bad, and I am surprised that there are not more fires and more people maimed by these agencies than there are. It would seem with all the safeguards, warning and state laws dealing with this subject, people would learn the lesson of carelessness, indifference and ignorance, and allow no electric wiring or installation of electric devices to be done on their premises except by an authorized electrician.

Many cities have enacted ordinances regulating the activities in connection with this subject, and they are to be commended for their action, but in the absence of any state law covering electric appliances and wiring, every city, town and township should enact ordinances requiring all wiring to be done by an accredited or licensed electrician; or an ordinance requiring that all such work and devices be inspected by a competent electrician, or both such ordinances.

Not long ago a fire in Rapid City was caused from a common drop cord. A short circuit caused the cord to catch fire and burn off, this cord fell on a table containing papers, and as a result considerable damage was caused by this seemingly unimportant agency.

In a general store at Rockham, lamp cord was run through a partition and fastened to a nail. Contact with metal here caused the wire to short, and as a result the partition caught fire and did several hundred dollars worth of damage. The building would no doubt have been completely destroyed had this fire occurred in the night. Fortunately, it did not, and the fire department was notified before it had gotten beyond control.

The use of different size fuse plugs has become a common practice. The fire which occurred recently in the Ward Hotel at Aberdeen was no doubt caused by short circuit in some of the wiring. After the fire an examination disclosed fuses ranged from six amperes up to thirty. Different reasons were given for the cause but if the fuses did not release the current when the short circuit occurred, it is only natural to suppose fire resulted from this condition.

When fuse plugs blow, without any apparent reason, an electrician should be called, and the trouble located and corrected. It is dangerous to put in heavier plugs or put in plugs that have not been approved by your local light and power company.

Electrical devices and appliances should have proper safeguards. Pressing irons should be equipped with pilot lights. A bad fire in Aberdeen recently was caused by a pressing iron being left turned on. Had this iron been provided with a pilot light this fire would not have happened as the light would have been noticed when the building was closed.

Recently a fire occurred in a laundry in Kadoka, caused partly by improper installation of a gasoline engine. The exhaust pipe was blown off where it passed through the outside wall of the building and allowed the exhause to contact with the side wall. This was caused indirectly by a short circuit in the wiring, which caused the engine to backfire violently and to shake the connection off.

Fire chiefs should make frequent inspections and report all defects to the occupants, and to this department if the trouble is not corrected. Cities should compensate their volunteer chiefs for this work; or better still, put their fire chiefs on a regular salary and allow him to spend all of his time looking after fire equipment and fire hazards.

Middletown, Del., Dedicates New Fire Station—A new fire station has been dedicated in Middletown, Del.

Mt. Holly Plans for Celebrations

Under the general leadership of Miss Helen McHugh, Mt. Holly, N. J., is planning a Firemen's Celebration in honor of the 175th anniversary of Relief Fire Company No. 1. This is believed to be the oldest company in America. July 10–16 has been set aside for this celebration and events have been planned for each day.

On Sunday, July 10, there will be memorial services under a large tent, and on Monday the town will be turned over officially to the firemen. Wednesday has been set aside as Governor's Day and Governor Moore of New Jersey is expected to act as speaker of the day. In the evening, there will be a Twilight Parade in which the various fraternal organizations will participate. A pageant will be presented on July 14. There will be a street ball masque and mardi gras with prizes awarded for costumes and dancing.

The firemen's parade will be held on July 16, and the committee believe that the parade will be the largest in the history of the community. In order that the committee may have some idea of how many will participate so that the proper amount of refreshments will be ordered, each company that plans to parade is urged to write to Relief Fire Company No. 1, Mt. Holly, N. J.

Motorcycle Used for Rural Fire Protection

A motorcycle equipped with fire-fighting appliances is being used successfully in California for rural fire protection, especially in the sections which do not have organized fire departments. The people there have nicknamed the fire-fighting outfit, "Hell 'N Maria." The apparatus is able to make good speed on roads which would be impassable for heavy fire apparatus.

W. Springfield Chief 24 Years in Service—Chief Elam R. Jones, head of the fire department in West Springfield, Mass., rounded out twenty-four years of service as permanent chief.

Tracy to Become State Agent—J. A. Tracy, state fire marshall of Iowa will become a state agent on July 1, working in the bureau of investigation of the department of justice. Mr. Tracy became fire marshal in 1919.

Portland Ready for N. E. Chiefs

(*Continued from page* 584)

The Portland Water Company was chartered in 1866 to take water from Long Creek in Cape Elizabeth, but in 1867 the charter was amended to allow the taking of water from Sebago Lake. Ground was broken on May 4, 1867, and the works were completed on July 4, 1870. Sebago Lake is 17 miles distant from the city of Portland and is 14 miles long by 6 miles wide. It is very deep and is fed mainly by springs.

Development of Water Works

The water works are now under control of a public municipal corporation known as the Portland Water District which was created by an act of the Maine legislature, approved March 27, 1907. The works were taken over by the Portland Water District from the Portland Water Company in 1908. The district supplies, besides the city of Portland, the cities of South Portland and Westbrook, and the towns of Gorham, Cape Elizabeth, Windham, Scarboro, Falmouth and Cumberland. Peaks Island is supplied by the Peaks Island Corporation for the greater part of the year from the distribution system of the city and during severe cold weather from driven wells.

The Portland Water District is under supervision of a board of five trustees elected by popular vote. The water from Sebago

Station of Hose 8 and Engine 8

Lake is distributed by gravity in two services. The low service has two reservoirs in reserve and an equalizing standpipe within the city. A standpipe in South Portland equalizes on the high and low services and another in Foreside, 5 miles from the city, on the high service. Sebago Lake has an area of 45.6 square miles and a drainage area of about 436 square miles. The intake pipe extending into the lake connects with a masonry screen well from which a conduit extends 5,470 feet to a settling basin with a total capacity of 10,680,000 gallons. From the settling basin a 42-inch cast iron main extends about 240 feet and supplies 4 mains which extend toward the city.

The low service is supplied through three of these mains, a 20-inch cement lined pipe 19,100 feet in length, a 26-inch cement lined pipe 18,300 feet in length, and a 30-inch cast iron pipe, 20,900 feet in length. The high service, which was completed in 1912, consists of 75,700 feet of 42-inch cast iron pipe. In the congested value district of the city there is pressure of 64 to 70 pounds in the high service and from 43 to 57 pounds in the low service.

Collection of Old Fire Relics

The Portland Veteran Firemen's Association maintains its own building at the corner of South and Spring Streets, where there is a very valuable and fascinating collection of souvenirs of volunteer days, including historic old leather buckets, belts, silver trumpets, fire prints, and portraits of former chiefs. The association owns the famous hand engine "James W. Plaisted" and also the hand tub "Atlantic No. 2," which was built by Leonard Crockett in 1848. The officers are Henry W. Way, president; George N. E. Kimball, financial secretary; George A. Dow, treasurer, and Edwin N. Palmer, clerk.

Some of the well known Portland fire chiefs of volunteer days and the years when they served are given below: Nathaniel Mitchell, 1835-1838; Dudley Cammett, 1839; Neal Dow, 1840-1845; Charles Davidson, 1846-1855 and 1857; Franklin C. Moody, 1856-1869; Samuel R. Leavitt, 1857-1859; Lewis B. Smith, 1860; Harris C. Barnes, 1861-1864; Ezra Russell, 1865; Andrew J. Cummings, 1872-1873; and Nahum Littlefield, 1877-1880 and 1883.

Out in Evergreen Cemetery there is a handsome Firemen's Monument which was erected by citizens in honor of the Portland Fire Department in 1898. Memorial exercises for departed comrades are held at this lot each year by Portland firemen in accordance with the custom throughout New England.

The handsome new Central Fire Station on Congress Street, which was dedicated on August 4, 1925, contains every modern convenience for the firemen and a fine suite of offices for the chief of department and the clerk on the second floor. Two engine companies, a chemical company, a city service ladder truck, and an 85 foot aerial hook and ladder truck are quartered in this house.

Chief Sanborn is rightfully proud of this building and of the splendid record which the department has made in cutting down the fire losses. The figures for 1926 and for the first three months of 1927 show a 50 per cent reduction over the losses for the previous corresponding periods. The chief believes that this is largely due to the rigid inspection system which he has installed as a part of the fire prevention and clean-up campaign carried out by the firemen. There were 12,000 building inspections made by Portland firemen last year. The records show that there was a 30 per cent reduction in the number of bell alarms received in 1926 compared with 1925. In the past year 76.6 per cent of the fires in Portland were extinguished with chemicals.

Barnes in Charge of Fire Alarm

The fire alarm system is in charge of Frederick Barnes, superintendent of the electrical division, who also has charge of the police signalling system. The fire alarm force consists of the superintendent, four operators, three linesmen, and one inspector. The main system is of the combined automatic and manual type manufactured by the Gamewell Company, of Newton Upper Falls, Mass. The fire alarm headquarters is located in a two story fireproof building devoted exclusively to fire and police signalling purposes. The ground floor contains stockroom and shop and the second floor the operating and battery rooms, electrician's office, sleeping room, and bath. Equipment includes a 36-circuit charging board in two sections and the usual indicating instruments; a 40-circuit protector board, a 12-circuit box relay board, four pen ink registers, single dial 4-figure manual transmitter, a 12-circuit automatic repeater ordinarily in reserve, a time transformer operating from the repeater, ten punch registers and take-up reels, and a 5-circuit relay board. There are 230 street fire alarm boxes now in service. Electric traffic horns are situated at busy intersections

Left, Firemen's Monument Dedicated by the City in 1898. Right, Portland's Fireboat Cruising in the Harbor

on Congress Street to give warning of approaching fire apparatus.

The department repair shops are located on India Street at the former quarters of Engine 1 and Ladder 5. The fireboat is stationed at Custom House Wharf.

Since the organization of the permanent paid fire department in Portland there have been only four chiefs, as follows: Chief M. N. Eldridge, 1896-1911; Chief P. J. Flaherty, 1911-1914; Chief A. D. Butler, 1914-1923, and Chief Sanborn from 1923 to date.

Fireboat Built in 1891

The fireboat, built by a local shipwright in 1891 for an island passenger boat, was purchased by the city and placed in fire service in 1895. It has a wooden hull and is 71 feet long with 17 feet beam and draft of 6.5 feet. It is of 47 gross tons and 24 net tons displacement. The speed with a 50 horse power steam engine is 8 miles per hour.

One Amoskeag pump was placed in the boat in 1895 and a second was installed in 1909. The vertical boiler, nine feet high, and eighty-two inches in diameter, was rebuilt in 1901 and the boat was given a general overhauling in 1906. From eighty to one hundred pounds of steam is maintained at all times. From eight to ten tons of coal is carried on board, also 2,000 feet of 2½-inch hose and a number of nozzles, from 1½-inch to 2½ inches in diameter. There are four hose connections and two turret nozzles. Two men sleep on the boat and three sleep in rented quarters on the adjoining dock.

Equipment Carried on Apparatus

Equipment carried on pumpers and hose wagons is generally uniform and usually includes axes, portable chemical extinguishers, crow-bar, hose straps, hydrant hose gate, hydrant wrenches, lanterns, open and shut-off nozzles with 1 to 1¼ inch tips, nozzle holders, rope, and plaster hook. Five hose wagons carry a flush hydrant chuck and double male and female connections; three have pulmotors and two have life belts. Appliances for handling special streams include deluge sets, cellar pipes, turret pipes, ladder pipe, siamese connections and distributing nozzles.

The chief officers estimate that sixty to seventy per cent of the fires are extinguished with chemicals. Two chemical lines are frequently laid from apparatus equipped with two reels and large hose lines are usually laid to back up chemical lines. Shut-off nozzles with ½ to 1¼-inch tips are used on single lines from hydrants for ordinary fires; for serious fires engine streams are used.

The aerial is a rebuilt Hayes truck with Dahill compressed air hoist and 4-wheel tractor. It carries, in addition to the aerial, eleven other ladders including a 50-ft. extension and one roof ladder. Each of the service trucks has one or two chemical tanks and carries 8 to 17 ladders including a 50 or 55-ft. extension ladder and two or three roof ladders. The aerial ladder is equipped with a ladder pipe.

Directory of Stations

Engine 1—Seagrave Pumper, 1,000 gallon capacity. Captain Melville G. Frank, Lieut. Walter M. Jackson, Central Station.
Engine 2—Horse-drawn steamer, 800 gallon capacity. Reo Comb. Hose and Chem. Horse-drawn ladder truck. Captain Chas. H. Mayberry, Lieut. Geo. T. Harding, Lieut. Edw. A. Hodgdon, 134 Congress St.
Engine 3—Tractor drawn steamer, 800 gallon capacity. Horse-drawn hose wagon. Captain Timothy E. Quinlan, Lieut. Jas. H. Vickery, 176 Brackett St.
Engine 4—Seagrave Pumper, 750 gallon capacity. Captain Edw. T. Honan, Lieut. Ralph Moses, 155 Spring St.
Engine 5—American-LaFrance 750 gallon pumper. Captain Chas. F. Feeney, Lieut. Guy R. Purinton, Central Station.
Engine 6—American-LaFrance 350 gallon pumper. Horse-drawn ladder truck. Captain Wm. F. Moulton, Lieut. John W. Lombard, Lieut. Frank H. Joseph, 295 Park Avenue.
Engine 7—Fireboat 2,000 gallon capacity. Captain John M. Wallace, Lieut. Chas. H. Miller, Portland Pier.
Engine 8—American-LaFrance 1,000 gallon pumper. Captain Amos S. Knight, Lieut. Leslie R. MacVane, 536 Deering Avenue.
Engine 9—Reo Comb. Hose and Chem. Captain Geo. W. I. Stevens, Lieut. Frank J. Mullins, 9 Arbor St.
Hose 11—Reo Comb. Hose and Chem. Captain John Q. Jordan, Lieut. (Detail), 579 Ocean Avenue.
Hose 12—Reo Comb. Hose and Chem. Captain Melville E. Griffin, Peaks Island.
Ladder 1—American-LaFrance City Service Truck with 35 gallon chemical. Captain Jos. A. Cooper, Lieut. Arthur E. Libby, Central Station.
Ladder 3—Indiana Comb. Truck and Chem. Captain Jos. L. Blake, Lieut. Wm. S. Berry, 163 Brackett St.
Ladder 4—American-LaFrance City Service Truck with 35 gallon chemical. Captain Frederick C. Larsen, Lieut. Stephen A. Dow, 11 Arbor St.
Ladder 5—Tractor (Seagrave) drawn 85 foot aerial. Captain Wm. E. Fuller, Lieut. Frank J. Conroy, Central Station.
Chemical 1—Mack Chemical (three 40 gallon tanks). Lieut. Dwight F. Tinkham, Central Station.
High Pressure Wagon No. 1—Indiana, carrying 1,500 feet, 3 in. hose and 2 guns mounted. Central Station.
Board of Engs.—Oliver T. Sanborn, Chief; Albion H. Moulton, Deputy Chief; William R. Read, District Chief.
Unattached—Frank P. Carr, Captain, Clerk Headquarters; Henry G. Rowe, Captain, Supervising Engineer; Ralph H. Eaton, Captain, Master Mechanic; Edwin H. Gaddas, Mechanical Engineer; Arthur J. Murdock, Chief's Chauffeur; Chas. E. Skillin, Stock Clerk.

Herald Harbor, Md., Lays Corner Stone—The corner stone for the new fire station in Herald Harbor, Md., has been laid amid fitting ceremonies.

Ridley Park, Pa., Awaits Apparatus—Ridley Park, Pa., is expecting the delivery of its new fire apparatus. The department is making preparations for an elaborate Fourth of July celebration because of this.

Chief Rose of New London, Retires

Chief Charles Rose, member of the New London, Conn., department for fifty-five years, and head of the department, retired from the service after his long career in serving the public.

Chief Charles Rose

The chief asked to be placed on the pension roll because of injuries received in line of duty. The council voted to place him on a pension from June 1, 1927. He worked his way up from a member of the old volunteer organization of the city to his present high office.

It was an accident last spring that robbed the chief of much of his ability as an active firefighter. At that time while in the performance of his duties, he was hurled from the Chief's car as it was crashed into by a truck, and he received a compound fracture of his leg. After undergoing treatment for more than a year, he is now well again, but he is obliged to use a cane in going about. The shock that he suffered makes it impossible for him to tend to the exacting duties of fire chief.

Last year he served as president of the Connecticut State Firemen's Association.

Fire Horses Honored by Tablet

The idols of another day are to be honored! A bronze tablet is to be erected at the foot of the firemen's memorial in New York city to honor the horses of the fire department who are now ex-officio.

The work of the horses of the fire department was eulogized by the president of the Society for the Prevention of Cruelty to Animals, and the spirit of the horses was praised. A member of the park board accepted the tablet from the S. P. C. A. organization on behalf of the City of New York.

The last of the fire horses in New York was retired in 1925 in the borough of Brooklyn. It was stated that the motorized fire department does not give the people the thrill that the old fire horses used to do as they pounded down the paved streets.

The tablet bears the seal of the society and shows an angel of mercy staying the hand of a man who would beat a horse and on it is inscribed the following:

"This tablet dedicated to the horses that shared in valor and devotion and with mighty speed bore on the rescue."

Portland is Popular

Three different fire chiefs' associations will hold their conventions in Portland, Ore., during the month of August. The associations are the International Association of Fire Chiefs which will meet on August 9–12; the Pacific Coast Association of Fire Chiefs which will meet August 4–6, and the Oregon State Fire Chiefs' Association which will meet August 7–8.

It will be possible to arrive in Portland on August 4 and stay through the twelfth attending three conventions without a break in dates.

Great preparations are being made for the International convention. Five special trains will enter the city from the east and middle west, and the California delegation will also come by special train. The city expects between three and four thousand people for the various conventions. Portland is raising $15,000 with which to finance the meetings that will be held there in August.

Plans Perfected for Pikes Peak Protection—Plans have been completed for the protection of the forests about Pikes Peak and all details have been worked to safeguard against the dry season. The officials will concentrate on an educational campaign to educate the public to the value of being careful in the woods.

I. A. F. C. ANNOUNCES PROGRAM FOR PORTLAND CONVENTION

Uusually Interesting Topics to be Presented—Round Table Should Prove Interesting

CHIEF THOMAS R. MURPHY of San Francisco and president of the association, has announced the program for the coming convention at Portland on August 9-12. Judging from the topics to be discussed, there is every indication to believe that the sessions will be interesting and that those attending will reap an immense amount of benefit.

Tuesday, August 9

The morning session will open up with invocation by Archbishop Edward J. Howard. There will be an address by Governor Patterson, an address of welcome by Mayor George L. Baker and an address by Commissioner Bigelow. Chief Joseph N. Sullivan of Utica, N. Y., and a member of the committee on the constitution and by-laws, will reply to the words of welcome. The memorial address will be given by Dr. E. H. Pence and there will be music by a quartet. Following the morning session, the members will adjourn for the official group photograph.

The afternoon session will start at 2 p. m. Chief John Kenlon of New York will lead in the discussion of "Traffic Problems and the Cooperation Between Fire and Police Departments." Others to take part in this session are Calvin Lauber, engineer of the National Board of Fire Underwriters; Police Chief D. J. O'Brien of San Francisco, Cal., and Police Chief Jenkins of Portland, Ore.

In the evening there will be a number of district dinners.

Wednesday, August 10

The morning session will open at 9 a. m. with the topic, "Preparedness for Major Disasters," to be discussed by Chief R. J. Scott of Los Angeles.

Another topic for the morning meeting will be "Need for Fire Fighting Equipment in High Buildings During Construction Period," by Chief John Kenlon of New York city.

The convention will adjourn in the afternoon to inspect the exhibits in the Exhibit Hall. There will be a number of fire prevention talks in the exhibition room.

In the evening at 7.45, there will be a round table discussion. Some of the topics that have already been presented by members will be found elsewhere in this issue. All members are invited to contribute to this discussion.

Thursday, August 11

Frank C. McAuliffe, chief of patrols of Chicago, will start the morning session by a talk on "Sprinkler Failures and How to Guard Against Them." The fifth topic before the convention will be presented by M. B. Anfenger of the Standard Oil Company. It is "Extinguishing Oil Fires With Foam," and it will be followed by discussion.

The afternoon session starts at 2 p. m. Battalion Chief R. Schubert of San Francisco, Cal., will give a talk on "Humidity and Its Relation to Fires." Chief L. Holden of Portland, Ore., will give a talk on "Modern Assignment Systems and Running Cards." The last topic will be "The Hazards of Shingle Roofing," but the speaker has not been announced.

In the evening there will be a dinner and ball in the auditorium.

Friday, August 12

The convention will close with the morning session, at which time there will be the election of officers. In the afternoon, the members are given time to take trips about the city although the convention will be officially closed. Those planning to go on the trip to Alaska will have to start packing for the trip to Seattle, from which the boat will leave.

According to those actively engaged in the preparations for the convention, there should not be a dull moment during the stay in Portland. Chief L. Holden will be the convention host, and he together with the city officials and the Chamber of Commerce, have made extensive plans for the entertainment.

All the topics that will be discussed are live ones that are confronting the heads of the fire departments at the present time.

Fleming, Chief of Green Bay, Wis.—Lawrence Fleming has been appointed acting chief of Green Bay, Wis.

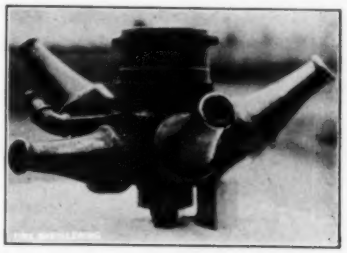
Easton, Pa., Against Firemen Working—A protest has been made in Easton, Pa., against permitting firemen to engage in other work outside that of fire-fighting.

CHIEF J. W. HEFFERNAN AWARDED NEW YORK ADMINISTRATION MEDAL

Honor Given Because of Invention of Heffernan Distributor—Also Designed Gate Valve Used to By-Pass Hydrant Line

By WILLIAM JEROME DALY

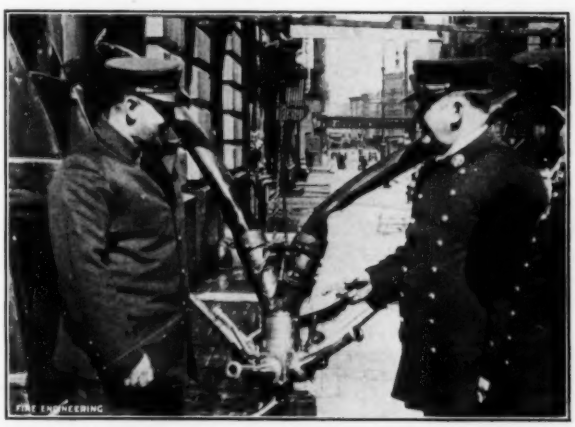
FIRE COMMISSIONER JOHN J. DORMAN of New York city has awarded to Deputy Chief James W. Heffernan, the Administration Medal for the year 1926. This medal is awarded annually to the member of the department who makes the best and most progressive suggestion or recommendation for the good of the service during the year. Chief Heffernan's achievement is the Heffernan Distributor.



Heffernan Distributor

This tool is a giant weighing about fifty pounds and containing six smooth bore nozzles equally distant but about 7 degrees apart in a vertical plane. The nozzles can cover an area of 14,400 square feet and discharges about 1,200 gallons per minute at a pressure of 175 pounds. It is used with two 3-inch lines from high pressure or from pumping engines or with one 3½-inch line from a fireboat.

Two nozzles of 5/8-inch cause it to revolve and these can be regulated as to the speed of the distribution. Thus far Chief Heffernan has been carrying the distributor in his own machine and with it he has extinguished fifteen fires in the cargoes of ships and one or two fires in cellars of buildings. The department repair shops is now turning out ten of them for use on all fireboats.



Showing the Use of the Distributor in Front of the New York Fire Department Repair Shop

The medal will be presented to the Chief by Mayor Walker at City Hall on Tuesday, June 21, along with the other medals for heroism by members of the department last year.

Chief Heffernan is one of the New York Fire Department's best minds. He is also the inventor of the Heffernan Gate Valve for by-passing a hydrant line to a gasoline pumper which was used for stretching a line before taking suction at the hydrant. His district embraces the old high hazard section of lower Manhattan from Canal street to the Battery. He was an engineer in the service coming from the Fire Patrol. He has a son, Lieut. William J. Heffernan, assigned to Engine Co. 26.

Mariton, N. J., to Purchase Apparatus—Firemen of Mariton, N. J., are planning the purchase of new fire apparatus.

Gillernan in Charge of San Jose Bureau—Jack Gillernan, member of the San Jose, Cal., fire department for twenty-five years, has been named fire prevention officer for the city.

Chief Sandidge of Lynchburg, Dead

William L. Sandidge, chief of the fire department in Lynchburg, Va., for the past twenty-five years, died as the result of heart trouble while riding in his automobile in the city. He was a member of the department since 1886 and at the time of his death, he was sixty-two years old.

The Late Chief W. L. Sandidge

The late chief is survived by his widow, two daughters, and two sons. One of his sons is a member of the faculty of Princeton University and the other is practicing medicine in Germany.

Chief Sandidge was an active worker for the fire associations in his part of the country.

Berkeley Starts Drive

Through the activity of Jay Stevens, state fire marshal of California and executive secretary of the I. A. F. C., Berkeley, Cal., has started its fire prevention drive early.

About half of the 17,000 residences in the city have been visited by firemen and pamphlets left on "Home Fire Prevention." The members of the department have devoted much of their off-time hours to this work, and the city was divided up into zones to ensure that each of the homes in the city was covered.

The city is ahead of others in their drive, and the officials only waited until the necessary printed forms and literature was received before they started on their campaign to safeguard Berkeley against fire.

FIRE AND POLICE DEPARTMENT WORK SIMILAR AND CLOSELY COORDINATED

Police in Keeping Hydrants Clear; in Establishing Fire Lines and in Preparing Cases for Courts Work Directly With Firemen

By D. J. O'BRIEN,
Chief of Police, San Francisco.*

TAKING into consideration the objects to be accomplished by police and fire departments in their respective spheres I feel we can safely assert that there are no two branches of government so closely allied in their functions as these two departments. They are established, organized and maintained for the specific purpose of manning the front line trenches in peace times against the greatest enemies of organized society and civilized government. Indeed, we can better visualize the necessity for their existence and the services they render by considering the chaos and confusion which would exist were it not for the activities they engage in. These two departments properly co-ordinated and efficiently functioning give the highest possible degree of security to the law-abiding citizen. Fire departments as a whole, and through their sub-bureaus, are always on the watch for the removal of fire hazards. In other words, in the first instance, preventive measures are engaged in and where fires actually occur the services rendered by a fire department in extinguishing it and preventing its further spread is indeed a valuable asset to organized society.

Having in mind the general good of the community and the necessity for a close co-operation between state, county and municipal officials, it is hardly necessary to say that the workings of a fire and police department must be of close interest to each other. Of course, the details may differ in different communities and no doubt the efficiency of one county or municipal department may be increased by taking advice and counsel with the heads of other municipal and county departments.

Commenting on conditions in the city and county of San Francisco, I feel we can safely say that there is a great deal in common between the San Francisco fire and police departments. Where a certain condition is observed by the men of one department which affects the other department, that information is immediately transmitted to the responsible heads.

Among the many acts of co-operation between the fire and police departments of the city and county of San Francisco there is one which is of a great deal of importance in dealing with fire fighting. Of course, it is a matter of common knowledge that a ready response to fires is very essential on the part of a fire department. Avenues of travel must be maintained and kept open—in fact, every other line of activity on our public highways must be surrendered to the apparatus of the fire department responding to a fire. It has always been our aim and object to give every assistance along traffic lines to the fire department and I might add this privilege as to right-of-way has been recognized by the laws of our state and the ordinances of our municipality.

Supplementing these laws and regulations the rules of our police department provide for actual co-operation from a police standpoint at the scenes of fire. The superior officer in charge of a given district must respond to fires, ropes must be stretched, persons are not permitted to enter fire lines except a limited few who are clothed with proper authority. Details are immediately made to protect life and property at fire and to prevent crimes. Outposts are established so that traffic will be properly diverted

(Continued on page 609)

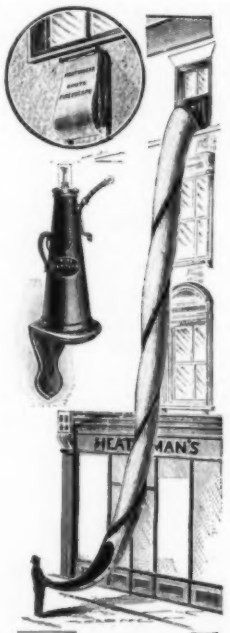
*From a paper read at the annual convention of the Pacific Coast Association of Fire Chiefs.

Types of English Fire Equipment

Each country makes progress along its own characteristic line in the development of apparatus and equipment for protection to life and property, and for purposes of comparison, it may be well to note some of the equipment being marketed in England.

The spiral fire escape chute is said to have found approval among several architectural firms in England. When not in use, it is folded up and placed as shown in the circular insert at the top. In case of fire, the chute is lowered to the street below, where it is held by someone. In use, the person enters the chute and slides to the street, protected from both flames and smoke.

In the center drawing at the left is a portable fire extinguisher. This seems much larger than the customary type of American chemical fire extinguished.



Types of English Equipment

Why Not Fete the Firemen?

A number of Minneapolis business men will entertain the entire personnel of the police department at two dinners. In commenting on the incident, the "Minneapolis Journal" writes as follows:

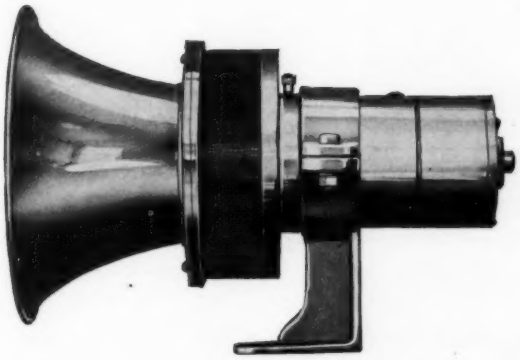
"The policeman has no very easy time of it at this season of the year. He works hard for the rest of us, and must ever be ready to risk his life, at a moment's notice, for the rest of us. And every now and then a policeman gives his life for the rest of us, and always just as heroically as any soldier in battle. So it is altogether fitting that the rest of us show that we recognize and appreciate the valuable services of these peace-time heroes.

"But how about those other peace-time heroes, the firemen? The winter days and nights are times that try firemen's souls. The colder the weather the more fires. A fireman has the most work to do at the very time when his work is the most difficult and dangerous.

"Would it not be right and proper for each of the district civic and commercial organizations in Minneapolis to entertain the fire-fighters of this district at a neighborhood dinner once a year? Each organization could give two of these affairs, one for the day platoon and one for the night platoon."

Fire Departments Everywhere are Equipping Their Cars with the

C. A. M.



Fire Apparatus Siren

Once you hear the sharp command — the distinctive, penetrating, far-reaching sound of the C. A. M. siren, you'll understand why it is being adopted by Fire Chiefs who have tried them all.

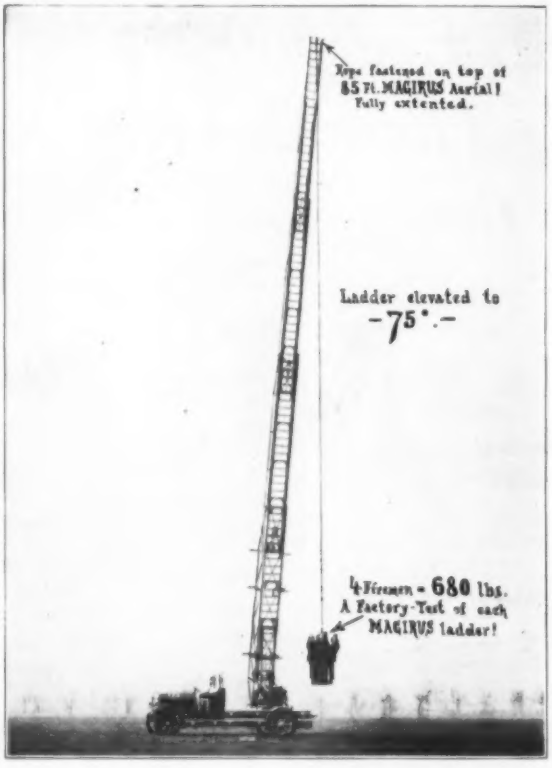
The C. A. M. is a *quality* siren — sturdily made of the finest materials obtainable. It is *unconditionally guaranteed.*

If you believe in having the best money can buy, we'll gladly send you a C. A. M. siren on free trial so you can see for yourself.

(Distributed by leading fire apparatus manufacturers and fire department supply dealers.)

C. A. M. Manufacturing Company

802 Humboldt Bank Building, San Francisco, California



ABERDEEN · S. DAK.
ACCEPTS
85 FT. MAGIRUS Aerial Ladder and Water Tower!

"doing everything but talk" (Fire Commissioner Ira Kruger.)

Fire Chief E. I. Kingsley, Aberdeen, S. D., writes:

"The wonderful performance of MAGIRUS Aerial ladder (85 ft.) delivered to this City, and tested on May fourteenth, 1927, passed all expectations. It seems to have almost human intelligence.

"Unsurpassed in its construction, it is a joy to the mechanical eye; proficient in its operation it is a winner with the members of the Fire Department, and will be an invaluable addition to our equipment.

"We are more than pleased with the wonderful piece of mechanism.

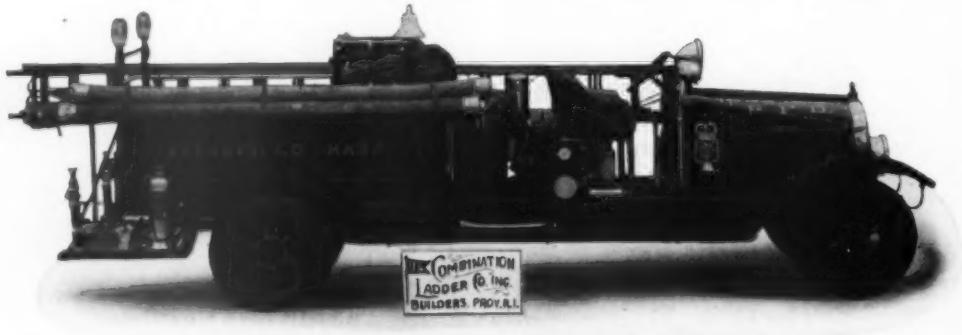
"Sincerely yours,
"(Sign.) E. I. Kingsley,
"Chief of Fire Department."

MAGIRUS Aerial Ladder and Water Tower Truck Equipped with SIDE-LADDERS, Tools, etc.

85 ft. MAGIRUS measuring only 27'4" over-all; 173" wheel-base! Only ONE MAN to drive the truck AND to operate ALL the different Ladder-motions!

American Magirus Fire Appliance Co., Inc.
4243 Broadway, Indianapolis, Ind.

Triple Combination, Six Cylinder Motor, 500 Gallon Pump, 100 Gallon Booster Tank, 1200 Ft. Steel Hose Body and Miscellaneous Equipment.



Recently passed a very successful 12 hour Endurance Test conducted by New England Insurance Exchange

We build { 300-350 and 500 Gallon Pumping Units.
Light and Heavy Hook and Ladder Trucks.
Fire Department Ladders and Miscellaneous Equipment.

Write us when interested.

COMBINATION LADDER COMPANY, INC.
381 Fountain Street, Providence, Rhode Island

INDUSTRIAL PLANT PROTECTION

Explosion Behavior of Vapors

Explosions of dust and of inflammable vapor present similar industrial hazards.

Dust explosions can be prevented if the dust is not allowed to accumulate and if all possible sources of ignition are eliminated. It is possible, however, that in spite of these precautions a chance explosion may occur. To safeguard against this contingency, a system of automatic vents can be provided which will relieve destructive pressures and so prevent any great property damage. The Factory Mutual Laboratories some time ago conducted practical tests by duplicating dust explosions in a full-size test house, and conclusively demonstrated the effectiveness of such automatic vents (see FACTORY MUTUAL RECORD for May, 1926).

Vapor explosions can be safeguarded in a similar way. Ample ventilation to prevent the formation of an explosive mixture is the primary essential, and next comes the elimination of sources of ignition, as far as either of these are possible in any particular process.

Both dust and vapor explosions can be prevented by providing an enclosure around the manufacturing equipment and reducing the amount of oxygen in the air inside the enclosure. An explosion is really a rapid combustion and so requires oxygen, which normally constitutes twenty-one per cent of the atmosphere. By supplying enough inert gas to reduce the oxygen content to fifteen per cent in case of dusts and to twelve per cent or lower for vapors, explosions cannot occur, because there is then not enough oxygen remaining to support rapid combustion. This method will probably not be generally adopted, however, because of the large amount of carbon dioxide or flue gas required and the difficulty of maintaining enclosures free from gas leakage.

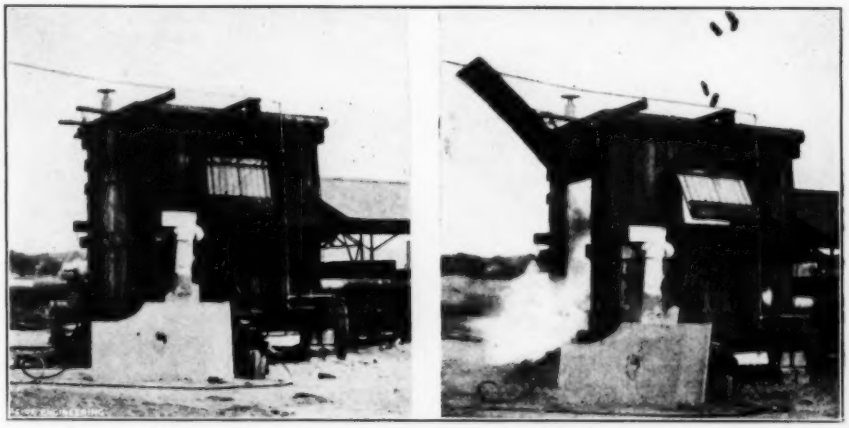
Considering the greater speed and violence of vapor explosions, the question next arose as to whether or not automatic venting would relieve destructive pressures as effectively as for dust explosions. Such venting if successful greatly reduces property damage, but does not safeguard against possible injury or burning of workmen. This is an important reason for making every effort to prevent the explosion, which is the only way to make life surely safe.

It was to determine the practicability of venting vapor explosions that further tests were undertaken by the Factory Mutual Laboratories. Vapor-air mixtures of various hazardous liquids at different concentrations were exploded in a specially constructed test chamber equipped with vents, the effectiveness of which was to be noted. The chamber itself is a compartment of heavy wooden construction, lined with tin and strongly reinforced with timbers and tie-rods. There are three vents, one a swing door, one a swing window, and one an L-shaped duct with hinged cover (see cut). A weighed amount of the liquid to be tested was forced by compressed air through a copper coil immersed in a heated oil bath. This apparatus vaporized the liquid, and the vapor was then introduced into the chamber through a series of spray nozzles, which atomized any liquid which may not have been properly vaporized. A spark plug directly in the center of the enclosure furnished the ignition.

The vapors of a number of typical inflammable liquids were tested, most of them at the request of and in collaboration with factory managers who desired definite information in order that the explosion hazard of certain industrial processes might be recognized and safeguarded. These liquids included acetone, wood alcohol, benzol, ethyl and butyl acetate, butyl alcohol, toluol, xylol, carbon bisulphide, and gasoline. Altogether a hundred or more vapor explosions were reproduced.

In these hundred or more test explosions the pressures produced were relieved harmlessly to the outside atmosphere, with no damage to the structure itself. The three vents had a total area of one square foot for every ten cubic feet of volume, and this ratio of one to ten is therefore considered effective for relieving the ordinary vapor explosion. The smaller ratio of one to fifty, it will be recalled, was previously determined as the proper ratio for dust explosions.

Vents for enclosures around manufacturing equipment where an explosion hazard exists should lead directly outdoors, either through the roof or side wall. They should be as short as possible, and preferably straight, although these tests showed that an L-shaped vent, when required for special conditions, is also effective. Vents which open into the room will relieve pressures within the enclosure satisfactorily, but the explosion wave may then cause loss of life or property damage in the room itself. This explosion wave can be relieved by swinging windows in an outside wall.



Views of Test House Loaded and Exploded

At the left is the compartment charged with five pounds of acetone and with all the doors and windows closed. At the right is the test house after the explosion has occurred. The force of the explosion can be judged from the bricks thrown in the air and the door blown open.

Hinged automatic vents were found superior to even light layers of asbestos paper fastened only at the edges. The explosion wave travels so rapidly that the slight strength of such paper will hold back the wave sufficiently so that dangerous pressures may be reached inside the explosion chamber. Self-closing as well as self-opening vents are desirable, as thus some portion of the inert atmosphere produced by the explosion can be retained and will prevent rapid burning of any combustible material remaining in the enclosure.

Although no direct measurement of the force of the test explosions was made, a good idea of the relative intensity of explosions of various vapors and of different concentrations of the same vapor was obtained. The vapor of carbon bisulphide, for example, was found to be apparently more violently explosive than any other tested. Acetylene, which is a gas at ordinary temperatures, by comparison explodes still more violently. Acetic acid vapors ordinarily would not be considered explosive, but at temperatures above 112° F., the flash-point of the liquid, a moderately severe explosion was produced. The pressures of this explosion could be safely relieved by a vent area of one square foot to every fifty cubic feet of volume. In other words, acetic acid explosions are approximately as violent as dust explosions.

The tests described above merely scratch the surface of all that it is desirable to know about this hazard. Several variable factors are involved in vapor explosions — the concentration of vapor and the uniformity of the mixture, the size and shape of the structure, the type of construction as regards rigidity or flexibility of walls, the original pressure, and to a certain extent the character of the source if ignition. Different combinations of these factors may produce explosions which vary widely in

(*Continued on page* 614)

Bookings of "The Fire Brigade" Continue

Additional bookings of "The Fire Brigade," the motion picture sponsored by the International Association of Fire Chiefs, are being received daily. The following list contains the additional bookings that have been received since the publication of the lists in the previous issues of FIRE ENGINEERING.

Due to the large number of bookings that are being received for "The Fire Brigade," space does not permit a listing of all the theatres that have booked the motion picture. Instead a listing will be made of the first date at which "The Fire Brigade" is to be shown in a municipality.

City	Theatre	Date
Arizona		
Prescott	K. of C	June 29
Arkansas		
Gravette	Ozark	July 28–29
Hot Springs	Princess	July 31–Aug. 1
California		
Alhambra	Alhambra	June 19–23
Arcadia	Arcadia	June 16–18
Bakersfield	Regent	June 19–21
Bellflower	Bellflower	June 16–17
Corona	California	June 22–24
Fullerton	Mission	July 3–5
Galt	Galt	June 16–17
Glebndora	Mission	July 5–7
Hanford	Golden State	July 3–5
Home Gardens	Garden	June 19–20
Jerome	Liberty	June 22–23
Lankershim	El Portal	June 27–29
Maywood	Egyptian	June 26–27
McCloud	McCloud Opera House	June 26
Pasadena	Washington	July 31–Aug. 1
Redlands	Liberty	June 19–21
Redondo	Capitol	June 26–28
Riverside	Regent	June 19–21
San Diego	Pantages	June 20–26
San Pedro	Cabrillo	June 20–22
San Leandro	Palace	July 6–7
Santa Monica	Criterion	June 26–28
St. Helena	Liberty	July 3–4
Sawtelle	Tivoli	June 26–28
Scotia	Winema	June 25
Taft	Sunshine	July 10–12
Wilmington	Granada	July 1–2
Delaware		
Harrington	Reese	July 20–21
Illinois		
Harrisburg	Orpheum	October 10
Hillsboro	Orpheum	June 30–July 1
Iowa		
Audubon	Crescent	August 23–25
Maryland		
Brunswick	Imperial	September 14–15
Dundalk	Strand	June 27
Ellicott City	Earle	July 4
Essex	Auditorium	June 16–17
Luke	Devon Club	August 15
Pocomoke	Empire	June 22
Westminster	New Star	July 18–19
Massachusetts		
East Boston	Orient Gardens	July 8–9
Harwichport	Modern	July 16
Onset	New Onset	June 24–25
Rockland	Opera House	Oct. 17–18 changed from June 13–14
Rockport	Town Hall	September 9
Three Rivers	Idle Hour	July 1
Wellesley Hills	Community Playhouse	July 13–14
Whitman	Empire	September 12–13
Michigan		
Gladstone	Lyric	August 24–25
Kalamazoo	New	July 26–27
Leondias	Business Men's Assn	July 16
Vassar	Rex	August 7–8
Mississippi		
Batesville	Rex	June 22
Como	Como	June 22–23
Grenade	Opera House	June 20–21
Sanatobia	Gloria	June 25
Sardis	Pastime	June 23
Missouri		
Auxvasse	Lyric	August 30–31
Lancaster	Strand	August 1–2
Mexico	Liberty	June 17
Union	Liberty	September 26–27
Montana		
Anaconda	Blue Bird	June 18–19 changed from May 18
Big Timber	Arcade	June 12–13
Deer Lodge	Rialto	August 3–4
Helena	Marlow	July 22–23
Malta	Palace	August 14–15
Nebraska		
Butte	Opera House	September 26–28
Cedar Bluffs	Opera House	July 29–30
Fairfield	Orpheum	October 18–19
Hooper	Amusu	June 19–20
Ponco	Royal Tree	October 18–19
Nevada		
Las Vegas	Majestic	July 1–2
New Hampshire		
Colebrook	Halycon	October 3
Conway	Bijou	August 12–13
Durham	Franklin	October 15
Exeter	Ioka	October 5–6
Groveton	Star	September 30
Lisbon	Empress	September 29
Littleton	Premier	September 27
Madison	Silver Lake	August 15
New Market	Star	July 25–26
North Woodstock	Corliss	July 7
New Jersey		
Audubon	New Century	June 27–28
Belmar	Rivoli	June 23
Egg Harbor	Colonial	July 13–14
Keansburg	Casino	July 3
Keyport	Surf	June 15–16
Maple Shade	Capitol	June 24–25
New Brunswick	Strand	July 6–7
New York		
Gowanda	Hollywood	July 3–4
Hilton	Hiltonia	July 11–12
Highland Falls	City	August 15–16
Lindenhurst, L. I.	Lindenhurst	June 15–16
Liverpool	Liverpool	July 20–21
Livoni	Royal	July 8–9
Lodi	Masonic Hall	July 11–12
Olcott Beach	Castle	June 18
Pleasantville	Rome	June 17–18
South Amboy	Empire	June 28–29
South River	Star	July 5–6 changed from June 14–15
North Carolina		
Asheville	Princess	July 27
Washington	Circle	July 6–7
Ohio		
Brewster	Brewster	August 29–30
Caldwell	Lyric	August 30–31
Garrettsville	Snows	June 23–25
Leetonia	American	July 1–2
Louisville	Louisville	August 21–23
Madisonville	Madison	June 23–24
Millersburg	Opera	August 5–6
Ottawa	Rex	June 28–29
St. Clairesville	School Auditorium	September 8
Struthers	Amuse U	August 7
Wellsville	Liberty	August 10–12
Oklahoma		
Blanchard	Picture Show	July 22–23
Cleveland	Melba	July 6–7
Grandfield	Princess	August 1–2
Hooker	Jewel	September 19–20
Laverne	Laverne	August 1–2
Maud	Strand	August 7–8
Prague	Savery	June 19–20
Wright City	Choctan Lumber Co	July 25–26
Pennsylvania		
Berwyn	Berwyn	June 16–17
Centralia	Grand	June 16–17
Conshohocken	Riant	July 13–14
Frackville	Victoria	June 15–16
Girardville	Opera House	June 20–21
Myerstown	Majestic	August 12–13
Norristown	Grand Opera House	June 2 (week)
Towanda	Keystone	June 29–July 1
Wilkes Barre	Savay	June 27 (week)
Williamsport	Keystone	July 18–21
Rhode Island		
Centredale	Trahan	July 23
Hillsgrove	Hillsgrove School	January 19, 1928
Manville	Central	July 22
South Dakota		
Beresford	Empress	July 19–20
Tyndall	Cozy	August 19–20
Tennessee		
Paris	Capitol	August 1–2
Vermont		
Bellows Falls	Star	August 8–9
Swanton	Champlain	July 4
Virginia		
Berryville	Charco	September 1
Clifton Forge	Masonic	July 19–20
Coeburn	Star	August 4–5
Covington	Strand	August 15–16
Elkton	Scottswood	June 29–30
Glade Spring	Dixie	August 19–20
Gloucester	Coutetourt	September 1
West Virginia		
Charles Town	Opera House	September 15
Wisconsin		
Algoma	Majestic	August 16–18
Beloit	Majestic	July 5–7
Lena	Legion Hall	July 14–15
Luxembourg	Opera House	August 7
Monticello	Karlen	August 7–9
Nekoosa	Rialto	July 19
Peshtigo	Lyric	September 1
Plainsfield	Strand	August 13–14
Rhinelander	Majestic	July 6–8
Wanzeka	Opera House	September 24–25

(*Continued on page* 609)

Buffalo Type 50

Speaks For Itself In

Construction — Service — Power

Write for Detailed Specifications

BUFFALO FIRE APPLIANCE CORP.

44 Central Ave., Buffalo, N. Y.

Progressive Fire Engineering

WHEN communities are of such small size that they are forced to depend for fire protection upon but few pieces of apparatus, it is essential that such equipment be of the highest quality available.

West Haverstraw, New York, has secured the ideal unit for its needs in the Model AC Triple Combination Pumping engine, chemical and hose car, pictured above.

Mack fire apparatus is built under the same exacting standards that have earned dominance for MACK transport equipment.

The complete line of MACK fire apparatus includes motors of either 4 or 6 cylinders, with pump capacities ranging from 350 to 1000 gallons per minute. Send for complete descriptive literature.

MACK TRUCKS, Inc.
INTERNATIONAL MOTOR COMPANY
25 Broadway New York City

One hundred and four direct MACK factory branches operate under the titles of: "MACK-INTERNATIONAL MOTOR TRUCK CORPORATION", "MACK MOTOR TRUCK COMPANY", or "MACK TRUCKS OF CANADA, LTD."

Holtzer-Cabot Fire Alarm Systems for Small Towns

Siren

"M D"
Fire Alarm Station

Electric Sirens

take the place of the antiquated bell or whistle for use in small towns as a fire alarm signal.

Will sound a general fire alarm or can be coded for location.

The Holtzer-Cabot Siren with its peculiar penetrating tone gives an understandable call for help.

It has a sound penetration radius of about two miles in ordinary weather conditions.

Write now for specifications.

Fire Alarm Control Panel in Case

Manufacturers of Signaling Systems for over 50 years

THE HOLTZER-CABOT ELECTRIC COMPANY

125 Amory Street, Boston, Mass.

6161-65 So. State Street, Chicago, Ill.

MORSE
Fire Boat Equipment

Invincible and Callahan Nozzles

Fire Department Supplies

are in use throughout the country and giving unsurpassed service.

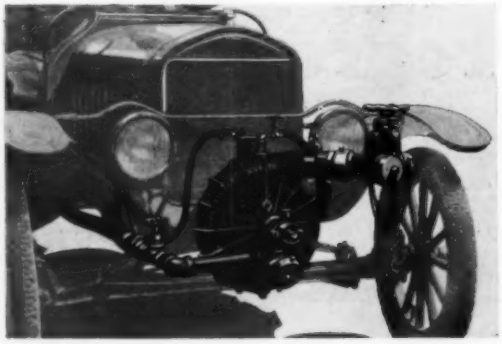
Every fire official should be fully acquainted with Morse equipment and have our catalog and other descriptive literature on file for ready reference whenever considering the purchase of new equipment.

You will find that it pays.

Write for Catalog

Andrew J. Morse & Son, Inc.

221 High Street — Established 1837 — Boston, Mass.



Are You Prepared?

TIME AND WATER — the difference between a small blaze and a disastrous fire. For genuine protection there's nothing to equal this new BARTON PUMP — automatically primed, no waiting, no fussing — large capacity at high pressure; easily throws 300 gallons per minute over four-story building. Quickly installed on any make of truck, and engine supplies power through patented take-off. Simple design, rugged construction — lasts lifetime. Real pump for villages and to boost city hydrant pressures.

Priced Very Low — Send today for full particulars on the BARTON. Don't wait — your next fire may be a stubborn one.

AMERICAN STEAM PUMP COMPANY
BATTLE CREEK, MICHIGAN

BARTON
PORTABLE FIRE PUMP

Protecting Gasoline Carriers from Static

Combined in the report of the Committee on Flammable Liquids of the National Fire Protection Association, is the recommendation that the tank cars that travel about the public streets carrying gasoline to the filling stations, be equipped with a drag chain.

One of the most elusive problems in safeguarding the tank car from fire is that of static. It is claimed by some engineers that in traveling about, the swashing of the gasoline on the

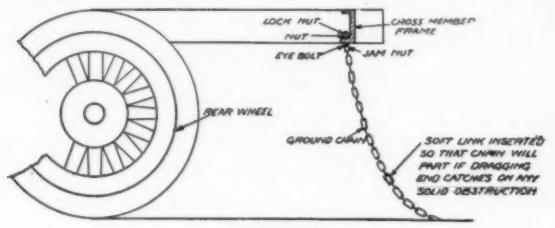


FIGURE 'A'

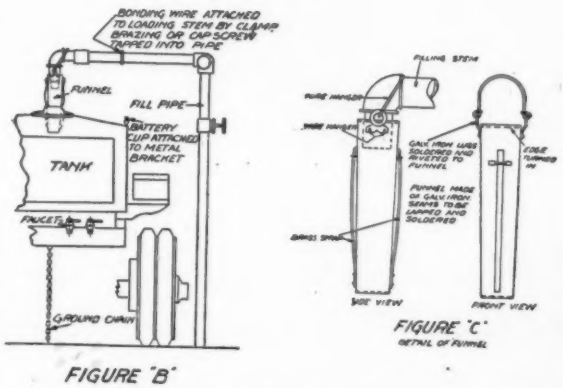

BONDING WIRE ATTACHED TO LOADING STEM BY CLAMP BRAZING OR CAP SCREW TAPPED INTO PIPE
FUNNEL
FILL PIPE
BATTERY CUP ATTACHED TO METAL BRACKET
TANK
FAUCET
GROUND CHAIN
FILLING STEM
GALVANIRON WIRE SOLDERED AND RIVETED TO FUNNEL
FUNNEL MADE OF GALVANIRON SEAMS TO BE LAPPED AND SOLDERED
SIDE VIEW
FRONT VIEW

FIGURE 'B' FIGURE 'C' DETAIL OF FUNNEL

Sketches of Drag Chain and Funnel.

A—Arrangement of drag chain; B—Method of making metal contact at the filling pipe, and from the chassis to the ground; C—Details of the funnel.

inside of the tanks develops charges of static electricity that is distributed about the tank. The filling and the emptying of the tanks also develops charges of static electricity, and in time sufficient of these static charges have accumulated to cause a difference of potential great enough for a spark to jump across some gap.

It must be remembered that the cars that carry these tanks are rubber tired so that the automobile truck is virtually insulated from the ground. Any charge that develops is left on the metal surface of the automobile until such time that it jumps a gap and is discharged. In the filling or emptying operation there is always a large amount of volatile gas vapor about the car, and being mixed with air, it is highly explosive, and readily ignited.

The drag chain is connected as shown. It is provided with a soft link, (that is, one of the links in the chain is made of much softer metal) so that in the event that the chain catches on some obstruction in the road, it will break, and not some part of the mechanism. The chain is not intended to carry off any static that is developed while the truck is moving along the road, and the committee that made the recommendations is fully aware that the chain does not make a perfect ground connection. The chain makes the best possible remedy for the condition stated, and helps safeguard the truck from fire while the gasoline is being emptied. Where the gasoline flows from the tank by gravity, the motor of the truck should be stopped while the gasoline is being emptied. The tank, chassis, axle and springs are connected to ensure that the static charges will be carried off. The truck carries extra soft metallic links to repair the drag chain, should it be broken off.

When a funnel is used it should be provided with a metal bail, and spring straps on the sides so that there will be the proper metallic contact between the funnel and the tank.

Lamar, Col., Purchases Apparatus—Lamar, Col., has purchased new fire apparatus.

Fire and Police Work Coordinated

(*Continued from page 602*)

and nothing is left undone to prevent any possibility of hindrance to the efficient workings of the fire-fighting unit.

Our police activities are further extended by the necessity of maintaining a proper clearance at all times at fire hydrants. Our officers are constantly on the alert to prevent unlawful blockading of fire hydrants and citations are always given where violations of this kind are discovered. That this requirement is essential can be readily seen by the interruption caused a fire-fighting apparatus in making proper connections with a water hydrant when an automobile is found unlawfully parked in front of a hydrant. It goes without saying that the better regulation of traffic upon our public highways and the more orderly and expeditious the movements of motor vehicles, the more ready will be the response in cases of fire and the more efficient will our fire department activities be. While our traffic problems have been discussed at length among police officials we have in mind the great requirement for co-operation with fire departments along traffic lines. We realize the great responsibility resting on fire departments in the protection of property and we are always endeavoring to effect a closer co-operation for the common good.

Another police activity which is engaged in is that of the apprehension of those who set fire to property in violation of our statutory enactments, particularly the statutes governing arson and the attempts to unlawfully collect fire insurance. This, of course, comes strictly within the sphere of police activity, but in the apprehension of criminals, the preparing of evidence, the arranging of witnesses and establishing of our cases for the prosecution in general we have always had the close co-operation of our Fire Marshal.

Using the Smoke Mask in Under-Water Rescue Work

Ordinary smoke helmets, such as are used by firemen in all large cities, are excellent equipment for under-water work and are particularly adapted for use in rescuing drowning persons and in recovering bodies of the drowned. A series of experiments with smoke helmets for water rescue work has been made in Portland, Ore., and they have been found entirely successful. A person wearing one of them may remain under water as long as 20 minutes without ill effects. It has the advantage over the usual diving outfit that the hands are left free to grasp things as they are on land. It is impossible, of course, to work at great depth, as is done by wearers of regular diving outfits. In Portland the smoke-mask rescue squad is now being trained as a diving squad for use in water rescue work. The illustration shows a fireman, wearing a smoke mask, successfully "rescuing" his co-worker from the Willamette River.

FIRE DEPARTMENT ACTIVITIES

Bellefontaine, O., Has New Pumper—A Seagrave pumper has been delivered to Bellefontaine, Ohio.

Milton, W. Va., to Have New Station—A new fire station is being erected in Milton, W. Va.

Canton, N. Y., Purchases Ladder Truck—Canton, N. Y., has purchased a Buffalo ladder truck for $4,700.

Oak Cliff, Tex., Dedicates New Fire Station—A new fire station was dedicated in Oak Cliff, Tex.

Mifflin, Pa., Purchases Fire Apparatus—Mifflin, Pa., has purchased its first piece of fire apparatus.

Wallace, Chief of Nutley, N. J.—William S. Wallace has been appointed chief of the Nutley, N. J., fire department.

Lincoln, Ill., Receives Equipment—The firemen of Lincoln, Ill., received new rubber coats, boots and other equipment.

Trenton Headquarters to be Ready in July—The new fire headquarters being erected in Trenton, N. J., is expected to be ready for occupancy by July 1.

New Fire Alarm Cable Placed in Fond du Lac—The longest fire alarm cable in the city has just been placed in Fond du Lac, Wis. This cable does away with a number of overhead wires.

New Albany, Ind., Has Two-Platoon System—The double platoon system of operation has been established in New Albany, Ind.

Holbrook, L. I., Presented with Apparatus—The volunteer firemen of Holbrook, L. I., N. Y., were presented with fire apparatus.

Madison, Wis., Increases Pension Fund—It was voted to increase the pension fund from $50,000 to $75,000 so as to take care of the fund in the proper manner.

New York City Orders 12 Pirsch Fire Trucks—New York city has ordered twelve pieces of apparatus from Peter Pirsch and Sons of Kenosha, Wis.

Canton, Mo., Receives New Pumper—Canton, Mo., has received a General Manufacturing Co. truck equipped with a Northern pump. It is equipped with a 60-gallon booster tank.

Lake Odessa, Mich., to Have Farm Protection—The farmers in the vicinity of Lake Odessa, Mich., are banding together in order to purchase a four-tank chemical truck.

Chicago to Open New Station in August—The newest of the fire stations in Chicago, Ill., will be opened some time in August and will house Engine Co. 88. At one time it was believed that the building would be completed by July 1.

Maywood, Ill., Chief 23 Years in Service—John J. Kronenbitter chief of the Maywood, Ill., department, has just rounded out twenty-three years of service—he has been head of the department since 1909.

Gallagher Retires as Ft. Sheridan Chief—Roy M. Gallagher, who was chief at Fort Sheridan, Ill., for the past eight years has retired. He was a fireman for twenty-seven years and retires at his own request. He will reside in Muskegon, Mich.

Losses in Niagara Falls, N. Y., Reduced—Chief R. D. Miller has been instrumental in reducing the fire losses in Niagara Falls, N. Y. The loss last year was the lowest in a period of four years.

Electrical Code Translated into Spanish—The National Electrical Code has been translated into Spanish and published by *Electricidad en America*, the Spanish-American electrical periodical.

Reading, Pa., Considers Erection of Home—At a meeting of the Schuylkill Fire Company in Reading, Pa., plans were made for the erection of a home to commemorate the activities of the volunteer fire department.

N. Rome, Ga., Completes Fire Station—A fire station has been erected in North Rome, Ga., that is an exact duplicate of one that has been erected in South Rome for $7,500. The erection of the two fire stations was financed by a bond issue.

Nearby Sioux City Towns Asked to Aid—Towns in the vicinity of Sioux City, Ia., that expect fire aid from Sioux City must have equipment that will match the hose thread. That is the essence of a notice broadcasted by the city officials.

Ponca City, Okla., to Have New Fire Station—Plans and specifications are being drawn for the second fire station to be erected in Ponca City, Okla. The station will be a bungalow type building.

University of Illinois Publishes Course—The proceedings of the Second Short Course on Fire Prevention, Control and Extinguishment held at the University of Illinois, June 15-18, has been published in a 341-page illustrated volume. The edition is limited.

Maryland Standardizes on National Thread—A law has been passed in Maryland making it unlawful for any one to sell fire appliances fitted with other than National standard hose threads. There is a penalty of from $25 to $100 and imprisonment for violations.

St. Paul Planning an Anti-Wooden Shingle Law—A concerted effort is being made in St. Paul, Minn., to have an ordinance that would permit only fire-resistive roof coverings. The local wooden shingle interests have put up a strong fight against the proposed measure.

Burning Auto Driven to Fire Alarm Box—A motorist in Lawrence, Mass., drove his burning auto to a fire alarm box and then turned in an alarm. But the response of fire apparatus was not necessary, as the heat melted the solder in the radiator, and the water from the radiator extinguished the fire.

Sound Beach, Conn., Purchases Apparatus—Sound Beach, Conn., purchased a Seagrave double bank city service truck equipped with a chemical tank. Chief Frank R. Gisborne has again been elected chief. He has served sixteen years as an officer in that department.

Indianapolis Purchase Delayed—A temporary injunction was granted by the courts to prevent Indianapolis from purchasing fire apparatus from the Mack International Truck Corporation and the American-LaFrance Fire Engine Company in accordance with a contract that the city awarded these firms.

Milwaukee Assistant Chief May Retire—It is expected that Lucas A. Van Toor, first assistant chief of Milwaukee, Wis., who has been ill for more than a month, will retire shortly on a pension. He has been a fireman for thirty-eight years.

Federal Marketing New Type of Siren—A new siren with a sound radius of one-fourth mile is being marketed by the Federal Electric Company. The siren is intended to be used on fire apparatus, and all visible parts are nickel plated. The device is entirely enclosed and the stator and rotor is made from die cast aluminum.

Talbot County, Md., Forms Fire Association—Firemen from Easton, Oxford, St. Michael's, Trappe, Cordova and Tilghman met in Oxford, Md., to form the Talbot County Firemen's Association. The following are the officers of this group: president, Oscar Sinclair, Tilghman; vice-president, J. L. Lemmon, Oxford; secretary, E. S. Gardner, Cordova, and treasurer, S. E. Simpson, Trappe.

Atchinson, Kans., Firemen Want Pay Increase—The firemen of Atchinson, Kans., have petitioned the council for an increase in wages to meet living conditions. According to the schedule asked, first and second class firemen are to receive $10 a month more, and third class firemen, $20 a month more. It is believed that because of the city budget, the increase will not go through this year.

Sullivan County Association Formed—The Sullivan, N. Y., County Vounteer Firemen's Association was formed at Calicoon Center with George Mauer of Liberty as president; Frank Goldstein, Hurleyville, vice-president; Adolph Doenick, Liberty, secretary, and Harry C. Schuler of Callicoon Center, treasurer. The next meeting will be held at North White Lake in September.

Number of Ohio Towns Considering Purchases—The following cities and towns in Ohio are considering the purchase of fire apparatus: Athens, Belmont, Bowling Green, Brady Lake, Covington, Crestline, De Graff, Edison, Ft. Laramie, Granville, Holgate, Marysville, Minster, Mr. Sterling, Neffs, New Philadelphia, Perrysville, Richwood, Sebring, Waterville and Weterville.

Illinois Cities Urged to Ban Fireworks—Fire Marshall John G. Gamber of Illinois has urged every community in the state to pass ordinances prohibiting the sale and discharge of fireworks. A number of cities have prohibited the sale of fireworks, but street vendors have set up stands just outside of the city limits from which point the fireworks are carried into the city. The suggested ordinance would prohibit even the discharge of such explosives.

Now Ready - - - -
A Code-Blowing Fire Siren

1-3 2-7 1-6 2-1 1-4 2-3

Designed Exclusively for Code Signaling — with a Voice That Can be Heard for Miles — Always!

Of Course
It's a Sterling!

The Crowning Achievement of Twenty-five Years of Specialization in Making the Best Fire Sirens

The fastest, surest and most durable code siren made! Operated manually, by central station transmitter, or by box system. Competitive tests welcomed.

Write for Full Information

THE STERLING SIREN FIRE ALARM CO., INC.
61 ALLEN ST. ROCHESTER, N. Y.

Shuredry

Salvage Covers

PROVE
their value

Chief Zumwatt of Pierre, S. D., says "Two years ago we purchased fifteen of your No. 101 12 x 18 'Shuredry' salvage covers and am pleased to say they are very satisfactory covers.

"They will not crack at the folds or become tacky when stored on the apparatus for long periods of time, are water tight and require very little attention, which make them most desirable for volunteer fire department service.

"I would recommend them to any chief."

Cost Less—Weigh Less—More Easily Handled

One man can easily carry four "Shuredry" covers up a ladder at one time. "Shuredry" covers will not freeze, nor are they subject to spontaneous combustion. They come in standard sizes. Our nearest plant will gladly send samples and prices. WRITE. . . .

FULTON BAG AND COTTON MILLS
Manufacturers Since 1879
Atlanta *Brooklyn* *Dallas*
St. Louis *New Orleans* *Minneapolis*

Eastman Nozzles and Deluge Sets

Are designed by Engineers who for over thirty years have specialized in equipment for producing superior fire-fighting streams in all sizes unsurpassed for solidarity, distance and effectiveness, and safely handled under all pressures.

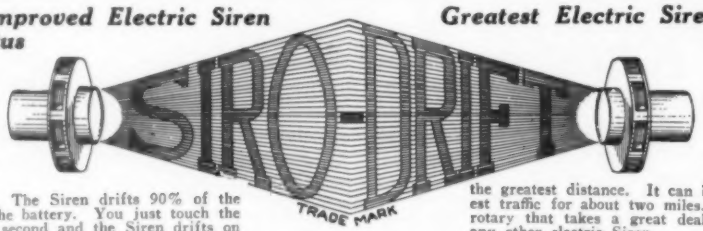
Eastman Deluge Sets provide for fighting large fires in the simplest and most practical manner possible. Be sure to specify Eastman Nozzles.

WRITE FOR CATALOG

SAMUEL EASTMAN COMPANY, Concord, N.H.

The New and Improved Electric Siren for Fire Apparatus

Greatest Electric Siren Ever Built for Fire Apparatus



SIRO-DRIFT

A Siren that will operate on one-tenth of the battery juice of any other electric Siren of its size. The Siren drifts 90% of the time without the aid of the battery. You just touch the Siren button for one-half second and the Siren drifts on for two or three minutes.

One-half second of current, applied means ten seconds running without any current, with plenty of noise—or two to three minutes at a slower rate of speed.

SIRO-DRIFT

Is 8 inches in diameter and gives the rising and lowering tones that carry the greatest distance. It can be heard through the thickest traffic for about two miles. Has a specially designed rotary that takes a great deal less power to drive than any other electric Siren.

We gladly ship a SIRO-DRIFT SIREN to any city on approval, transportation prepaid. Comes in three brackets —cross bar, on frame in front of radiator and under-the-hood.

Send at once for complete information

B & M Siren Manufacturing Co. LESTER H. MILES. *Owner* 929-931 South Main Street, Los Angeles, Calif.

CARPENTERLITES

Portable Electric Searchlights for Fire Departments

Two Switches

Two Filament Bulbs

Powerful

Aluminum Construction

Universal Joint Motion

Dependable

Send for catalog and prices of full line

Carpenter Mfg. Company
125 Broadway, Boston, Mass.

VAC-M ARRESTERS

VAC-M ARRESTERS

Small — *but* Very Important

Minutes lost in receiving an alarm often mean extra hours of hard fighting and greater fire loss.

The safety of your City and efficiency of your Department depends largely upon the never-failing operation of your alarm system.

VAC-M arresters are small and inexpensive but the protection of your alarm against the danger of lightning and other static disturbances is so important that VAC-M arresters should be standard equipment for your system.

Full Details on Request

National Electric Specialty Co.
Toledo, Ohio

S&M Special Lighting Equipment For Fire Apparatus **S&M**

Search-Lites
Red Safety-Lites
Spot-Lites
Pick-up-Lites

Drum-Type Head-Lites
Powerful
Handsome
Light projection—4000 ft.

S & M Lites are nationally known on account of their high quality and their scientifically made reflectors.

Model No. 21

The S & M Red Safety-Lite (originated by the S & M Lamp Co.) is rapidly coming into general use on Fire Apparatus. The intense flare of red light can be seen for several blocks and gives warning of approach of Fire Apparatus. Write for descriptive catalog.

S & M LAMP CO., (Inc.), 118 West 36th St., Los Angeles, Cal.

BADGES

of Every Description

QUALITY GUARANTEED

Right Prices
Prompt Delivery

Write for latest catalogue and price list

EVERSON-ROSS CO.
88 Chambers St., New York
Also makers of the ROSS Helmet

BI-LATERAL FIRE HOSE

THE BI-LATERAL FIRE HOSE CO.
230 West Randolph St., Chicago, Ill.

If a hose salesman can convince you by any argument that his three-year guarantee will result in just as good an adjustment, should one be necessary, as a guarantee for six years, from a reliable company, certainly if you have a goat, he's got it.

BI-LATERAL FIRE HOSE is guaranteed six (6) years.

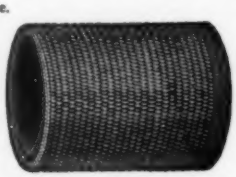
Multiple Jacket Fire Hose With Solid Woven Cover

Quaker Hose has a strongly-built, circular solid woven cotton jacket capable of standing high pressures.

Its tube is made to resist deterioration, is elastic and gives long service.

A high-grade hose for hard service.

QUAKER CITY RUBBER CO.
Manufacturers of Daniel's P. P. P. Rod Packing
Wissinoming, Philadelphia



Branches: New York, Chicago, Pittsburgh, San Francisco

PROPOSED IMPROVEMENTS

Dushore, Sullivan Co., Pa.—Dushore Fire Company purchased a piece of apparatus at cost of $5,500.

Mt. Carbon (Mail Pottsville) Schuylkill Co., Pa.—A Hahn triple combination car was recently purchased by the Mt. Carbon Fire Co., at cost of $6,000.

Providence, R. I.—A report will be submitted to the Common Council asking that Hose 10 fire station be torn down and a new station erected.

Seattle, King Co., Wash.—Mayor Landos recommended that a new fire district be created north of the Lake Washington Canal, to be known as the Sixth Battalion.

Topeka, Shawnee Co., Okla.—Provision is to be made in the 1928 budget for the purchase of new apparatus for No. 7 fire station which is to be erected soon. J. Waidelich, Chief of Fire Dept.

Holbrook, Norfolk Co., Mass.—A light fire truck is to be recommended for the Central fire station by the Finance Committee.

Albion, Calhoun Co., Mich.—City Council investigating different types of service trucks before purchasing apparatus for the fire department here.

Westfield, Union Co., N. J.—An Ahrens-Fox 1,000 gal. pumper was recently purchased for the local fire department here.

Albany, Dougherty Co., Ga.—City recently purchased an American-LaFrance pumper for the fire department. D. W. Brosnan, Chief of Fire Dept.

Franklin, Morgan Co., Ill.—Fire department to purchase new fire apparatus.

Linden, Genesee Co., Mich.—New chemical truck to be purchased for the fire department here.

Arcadia, Los Angeles Co., Cal.—Chief of Fire Department was ordered to purchase fire hose from funds available in his department.

Riverside, Cal.—Council adopted ordinance calling an election June 21 to vote on a $75,000 bond issue for fire apparatus and equipment.

Hartford, Conn.—Considering the erection of a bungalow type fire station on Blue Hills Ave. J. C. Moran, Chief of Fire Dept.

Revere, Suffolk Co., Mass.—Thomas J. Carrick was appointed chief of the fire department here.

For Sale
Fire Apparatus

Triple combination Howe-Ford motor fire truck. First class condition. Apparatus run less than 1000 miles. Excellent for small town. Address: Geo. W. Frear, Clerk, West Haven, Conn. 6-15-29, 7-13

When
In the Market

for equipment or supplies make your wants known through FIRE ENGINEERING. More bidders mean more competition and better satisfaction.

Proposals for Fire Apparatus

Borough of Fairview, N. J.

Bids opened June 16, 1927

Sealed proposals endorsed "Proposal for Fire Apparatus for Borough of Fairview, N. J." will be received by the Mayor and Council of the Borough of Fairview at a meeting to be held at Tiger Hose Fire House, Fairview, N. J., on June 16, 1927, at 7:30 o'clock p. m., Eastern Standard time; 8:30 o'clock p. m. daylight saving time. No bids will be considered that are presented before or after said stated time.

Each bid must be accompanied by a certified check on a National Bank or Trust Company of the State of New Jersey, for two per cent (2%) of the amount of the bid submitted, or a like amount in cash.

Upon the award of the contract, the certified checks or cash will be returned to the unsuccessful bidders.

The Mayor and Council reserves the right to reject any or all bids.

Specifications for the Automobile Triple Combination Pumping Engine and Hose Truck, to be purchased by the Borough of Fairview, are as follows:

Motor—Six-cylinder dual-valve double ignition engine.

Transmission—Four speed and reverse, located amidships.

Clutch—Multiple disc.

Rear axle—6-1 gear ratio; inverted worm drive.

Wheels—Standard 38" x 7" Budd Michelin disc type with one spare disc. Single front, dual rear.

Tires—Chassis furnished with 38 x 7 pneumatic tires, single front, dual rear.

Power Tire Pump—Mounted on transmission.

Chemical Tanks—Two Standard 40 gallon capacity tanks. Tanks made of best open hearth flange steel, highly finished. Heads swaged in and side seams riveted and copper brazed. Tanks have been chemically treated to prevent corrosion. Each tank has a clean-out valve, easily accessible. All tanks securely fastened to platform with heavy brackets and steel bands.

Tanks must be guaranteed for twenty-five years against bursting and corrosion.

Safety flange in each tank, absolutely preventing overcharging and excessive pressure.

Hose Basket.

Chemical Hose—150 feet of ¾" Underwriters' rubber covered, rubber lined hose coupled in 50 foot sections. Hose tested to 400 pounds pressure.

Hose Body—Capacity of 1200 feet double jacket fire hose.

One—750 gallons per minute capacity Rotary pump at 120 pounds pressure.

Dated: June 2, 1927.

GEORGE EBEL, JR.,
Borough Clerk.

6-15

Town Dragged from Fiery Well

A natural gas well in Sanford, Tex., broke into flames and instead of an impassive utility, it became a fiery crater which defied all manners of extinguishment. Four fire-fighters lost their lives in an attempt to conquer the flames.

Steam was conveyed from nearby boilers to put out the fire, and dynamite experts were on the scene to snuff out the soaring flames.

Residents rushed to get their property away from the blistering heat. Houses were jacked up and placed on skids so that they could be moved to a new location that was more safe. Women and children were removed to the outskirts of the town.

Sanford is a boom town formed along with other camps following the discovery of oil in the Panhandle a little more than a year ago. Between eight and nine hundred people live here, most of whom are employed as field workers. The buildings are of frame construction, unpainted, while many of the people live in tents.

Fire Proof Phone Equipment for Fire-Fighters

Two members of the New York City Fire Department demonstrating an invention by a German, Herman Draeger, which consists of 1,000 feet of non-inflammable wire, with the usual headphones, a gas helmet, etc. It is particularly adapted to the use of firemen in smoke or gas filled buildings, as the man wearing the mask on entering the structure on fire can report to his chief by means of the phone and keep him advised of conditions in the interior. The Rescue Squad No. 2, of the department, have been conducting the experiments in the use of the invention.

Fire Test of Cigars Made by Bureau

A rather novel test is that conducted by the Bureau of Standards of the U. S. Department of Commerce to determine the fire hazard of matches and smoking.

The bureau made 205 ignition tests with both cigars and cigarettes of typical sizes and the results clearly indicate that the fire hazard of cigards is far less than that of cigarettes.

Once a cigarette is ignited, it will burn by itself until it is completely consumed while cigars will go out in about one-fourth of the time required to completely consume a cigarette. When the lighted cigars and cigarettes were placed on pads with air currents of two to nine miles an hour blowing over them, the percentage ignition was considerably lower with burning cigars than with cigarettes.

CONVENTION DATES

June 16-18—PROVINCIAL FEDERATION OF ONTARIO FIREFIGHTERS. Annual Convention, Windsor, Ont., Can. Secretary-Treasurer, David H. Lamb, 132 Bellevue Ave. (2) Toronto.

June 16-18—MONTANA STATE FIREMEN'S ASSOCIATION. 36th Annual Convention, Helena, Mont. Secretary, D. E. Moser, Bozeman, Mont.

June 17-19—WISCONSIN STATE FIREMEN'S ASSOCIATION. 40th Annual Convention, Baraboo, Wis. Secretary, E. Philip Mueller, Jefferson, Wis.; State Organizer, Chief H. H. Niemeyer, Portage, Wis.

June 17-20—SIX COUNTY FIREMEN'S ASSOCIATION. Annual Convention, Sunbury, Pa.

June 17-18—FOUR COUNTY FIREMEN'S ASSOCIATION. Annual Convention, Lehighton, Pa. Secretary, P. J. McNally, West Catasaqua, Pa.

June 18—LEBANON COUNTY FIREMEN'S ASSOCIATION. Annual Convention, Fredericksburg, Pa. Secretary, William I. Kutz, Box 233, Myerstown, Pa.

June 20-25—ALLEGHENY COUNTY FIREMEN'S ASSOCIATION. Annual Convention, Wilmerding, Pa.

June 21-23—FLORIDA STATE FIREMEN'S ASSOCIATION. Annual Convention, Hollywood, Fla. Secretary, Chief F. C. Pfaender, Winter Haven, Fla.

June 21-23—HUDSON VALLEY VOLUNTEER FIREMEN'S ASSOCIATION. 38th Annual Convention, Poughkeepsie, N. Y. Secretary, Chief Chris W. Noll, Fire Department, Poughkeepsie.

June 21-23—KENTUCKY STATE FIRE CHIEFS' AND FIREMEN'S ASSOCIATION. 9th Annual Convention, Owensboro, Ky. Secretary-Treasurer, Capt. S. G. Render, 303 Speed Bldg., Louisville, Ky.

June 21-23—NEW ENGLAND ASSOCIATION OF FIRE CHIEFS. 5th Annual Convention, Congress Hotel, Portland, Me. Secretary, Chief John W. O'Hearn, Watertown, Mass. For reservations address Geo. F. Cobb Traffic Manager, 774 Albany Street, Boston, Mass.

June 21-24—THIRD SHORT COURSE IN FIRE PREVENTION. To be held at University of Illinois, Urbana. Address, C. E. Palmer, 401 Engineering Hall, University of Illinois, or State Fire Marshall John G. Gamber, Springfield, Ill.

June 22-23—SOUTH CAROLINA STATE FIREMEN'S ASSOCIATION. 22d Annual Convention, Darlington, S. C. Secretary R. S. Hood, Sumter, S. C.

June 27-29—MICHIGAN ASSOCIATION OF FIRE DEPARTMENT CHIEFS. Annual Convention, Bay City, Mich. Secretary, Chief Frank Ford, Highland Park, Mich.

June 28-30—SOUTHERN NEW YORK VOLUNTEER FIREMEN'S ASSOCIATION. 32nd Annual Convention, Sag Harbor, L. I., N. Y. Secretary, August Kalb, Rockville Center, L. I.

July 12-14—MICHIGAN STATE FIREMEN'S ASSOCIATION. 53rd Annual Convention, Lansing, Mich. Secretary, H. L. Williams, Luddington, Mich.

July 13-14—INDIANA FIREMEN'S ASSOCIATION. 10th Annual Convention, Indianapolis, Ind. Secretary, Frank H. Miller, Fire Headquarters, Terre Haute, Ind.

July 19-23—SOMERSET COUNTY VOLUNTEER FIREMEN'S ASSOCIATION. Annual Convention, Rockwood, Pa. Secretary, J. R. Shanks, Rockwood, Pa.

July 21-22—CENTRAL NEW YORK VOLUNTEER FIREMEN'S ASSOCIATION. 34th Annual Convention, Cortland, N. Y. Secretary, Thomas F. Murray, Cortland.

July 25-28—DOMINION ASSOCIATION OF FIRE CHIEFS. 19th Annual Convention, Hull, Quebec. Secretary, Chief James Armstrong, Kingston, Ont.

July 27-28—VERMONT STATE FIREMEN'S ASSOCIATION. 38th Annual Convention, St. Albans, Vt. Secretary, Edwin D. Moore, Bennington, Vt.

July 31-Aug. 1-2—IDAHO STATE FIREMEN'S ASSOCIATION. Annual Convention, Wallace, Idaho. Secretary, Willard Adams, Rigby, Idaho.

Aug. 1-2—WASHINGTON STATE FIREMEN'S ASSOCIATION. Annual Convention, Chehalis, Wash. Secretary, H. S. Jenkins, City Electrician, Fire Headquarters, Bellingham, Wash.

Aug. 4-6—PACIFIC COAST ASSOCIATION OF FIRE CHIEFS. 34th Annual Convention, Portland, Ore. Secretary, State Fire Marshal Jay W. Stevens, 1014 Merchants' Exchange Bldg., San Francisco, Cal.

Aug. 6—CALIFORNIA STATE ASSOCIATION OF FIRE CHIEFS. Annual Convention, Portland, Ore. Secretary, Chief William Cooper, Richmond, Cal.

Aug. 7-8—OREGON STATE FIRE CHIEFS' ASSOCIATION. 8th Annual Convention, Portland, Ore. Secretary, Thomas Coates, Tillamook, Ore.

Aug. 8-9—UTAH STATE FIREMEN'S ASSOCIATION. Twentieth annual convention, Springville, Utah. Secretary, H. E. Anderson, fire headquarters, Salt Lake City.

Aug. 9—MASSACHUSETTS PERMANENT FIREMEN'S ASSOCIATION. Annual Convention, New Bedford, Mass.

Aug. 9-11—CUMBERLAND VALLEY VOLUNTEER FIREMEN'S ASSOCIATION. 26th Annual Convention, Western Port, Md., Secretary, C. L. Jacobs, Waynesboro, Pa.

Aug. 9-12—INTERNATIONAL ASSOCIATION OF FIRE CHIEFS. 55th Annual Convention, Portland, Ore. Secretary, Chief J. J. Mulcahey, Yonkers, N. Y.; Executive Secretary, State Fire Marshal Jay W. Stevens, Merchant's Exchange Bldg., San Francisco, Cal.; Chairman, Exhibit Committee, Chief Albert Herring, Murphysboro, Ill.

Aug. 14-16—NEW YORK STATE PERMANENT FIREMEN'S ASSOCIATION. Annual Convention, Elmira, N. Y. Secretary-Treasurer, Frank A. Emden, 1200 Lenox Avenue, Utica, N. Y.

Aug. 16-19—FIREMEN'S ASSOCIATION STATE OF NEW YORK, and WESTERN NEW YORK VOL. FIREMEN'S ASSOCIATION. Joint convention of both associations, Niagara Falls, N. Y. Secretary, State Association, Fred A. Davis, Fort Edward, N. Y.; Secretary, Western N. Y. Association, Henry A. Clark, 21 Porter Avenue, Batavia, N. Y.

Aug. 19-20—CONNECTICUT STATE FIREMEN'S ASSOCIATION. 45th Annual Convention, West Haven, Conn. Secretary, D. W. Harford, South Norwalk, Conn.

Aug. 22 (week of)—NORTH CAROLINA STATE FIREMEN'S ASSOCIATION. Annual Convention, Greensboro, N. C. Secretary John L. Miller, Concord, N. C.

Aug. 24-26—VIRGINIA STATE FIREMEN'S ASSOCIATION. 41st Annual Convention and tournament, Alexandria, Va. Secretary, E. K. Landis, Pulaski, Va.

Aug. 24-27—CALIFORNIA STATE FIREMEN'S ASSOCIATION. Annual Conference, Stockton, Cal. Secretary-Treasurer, H. E. Strasser, 1171 Tenth Street, San Diego, Cal.

Sept. 7—DELAWARE STATE FIREMEN'S ASSOCIATION. 7th Annual Conference, Rehoboth Beach, Del. Secretary, Sam H. Carson, Dover, Del.

Sept. 7-8—MISSOURI STATE FIRE CHIEFS' ASSOCIATION. 5th Annual Convention, Kirksville, Mo. Secretary, District Chief J. T. Lynch, Kansas City, Mo.

Sept. 7-8—MISSOURI ASSOCIATION OF FIRE FIGHTERS. 2d Annual Convention, Kirksville, Mo. Secretary, M. J. Mulvoy, 3500 S. Grand Boulevard, St. Louis, Mo.

Sept. 12-14—ARKANSAS STATE FIREMEN'S ASSOCIATION. Annual Convention, Russellville, Ark. Secretary, H. D. Compton, Little Rock, Ark.

Sept. 13-15—ILLINOIS FIREMEN'S ASSOCIATION. 40th Annual Convention, Jacksonville, Ill. Secretary, Roy A. Alsip, Champaign, Ill.

Sept. 13-15—MASSACHUSETTS STATE FIREMEN'S ASSOCIATION. Annual convention, Salem, Mass.

Sept. 20-21—IOWA STATE FIREMEN'S ASSOCIATION. 50th Annual Convention and Anniversary, Emmetsburg, Ia. Secretary, E. E. Parsons, Marion, Ia.

Sept. 22-24—NEW JERSEY STATE FIREMEN'S ASSOCIATION. 50th Annual Convention and Anniversary, Atlantic City, N. J. Secretary, William Exall, Chamber of Commerce Bldg., Newark, N. J.

Sept. 23—NEW JERSEY STATE FIRE CHIEFS' ASSOCIATION. Annual Meeting, Atlantic City, N. J. Secretary, Fred A. Trowbridge, 17 South Street, Morristown, N. J.

Oct. 4-6—PENNSYLVANIA STATE FIREMEN'S ASSOCIATION. Annual Convention, Shamokin, Pa. Secretary, Charles F. Clark, 411 Bellevue Avenue, Wayne, Pa.

Oct. 17-19—KANSAS STATE FIRE CHIEFS' AND FIREMEN'S ASSOCIATIONS. 11th and 40th Annual Conventions, Kansas City, Kan. Secretary, Chief K. D. Doyle, Wamego, Kan.

Burning Freight Cars Ignite Plant

(*Continued from page* 586)

In the meantime fire was gaining headway in the steel storage warehouse. Lines operated at the positions described for a few minutes when additional box cars taking fire forced the line to withdraw to south from its position alongside the pattern storage house. This gave the fire a chance to gain headway in the latter building and also gain further headway in the steel storage building.

A short while afterward fire extended from the steel storage building into the machine shop, a two story frame structure and from then on its progress was fast.

It was not more than 15 minutes until the wood stock warehouse, the pattern storage building, the steel storage building, the machine, the paint shop and the wood shop were ablaze.

The department on noting the magnitude of the fire and realizing it would be impossible to hold it from spreading in face of the strong wind blowing from the north west, concentrated their efforts along the alley south of the buildings involved.

By withdrawing the lines located at hydrants south of this alley, and getting the lines in operation so as to protect the buildings facing the south side of the alley, the department was able to prevent the fire from extending further.

As it was, the entire block bounded by the alley, First Street, South Ann Street and Second Street was destroyed, but the fire did not cross the alley.

Great credit is due to the department for holding the fire from spreading across this narrow street.

The sprinklers installed in the woodshop proved of little value once fire was burning all around this building. They might have held the fire had it started in the wood shop but when fire was approaching the building from all sides, the sprinklers had no chance.

The Editor's ideas on the handling of this fire will be given in the next issue of this journal.

Explosion Behavior of Vapors

(*Continued from page* 605)

strength. Tests such as these could be run almost indefinitely with no assurance that the full range of possible intensities, or even maximum intensity, had been covered. However, the successful venting of a hundred or more tests, without one failure, shows that vents for vapor explosions are a practical safeguard and that the vent ratio of one to ten should be effective in all but the rarest cases.

Gilleran in Charge of San Jose Bureau—Jack Gillernan, member of the San Jose, Cal., fire department for twenty-five years, has been named fire prevention officer for the city.

Marshalltown, Ia., Asks for New Station—Those living on the south side of Marshalltown, Ia., have petitioned the council for the erection of a new fire station. It was claimed that the railroad going through the town isolated that section from the main fire protection of the city.

MATHEWS

(Reg. U. S. Pat. Off.)

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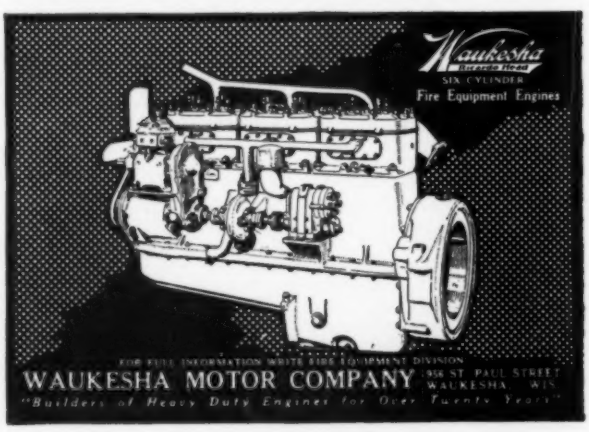


FALSE ALARMS

ADVICE TO THE WEARY

A drill master in one fire department had been having an unusually bad morning. All of his commands had been miscarried or the men did not appear to be very attentive to the work.

He vented his spleen on one rookie, who by himself, when the men were dismissed, tried to brush up on some of the evolutions.

As the drill master went by him, he said, "Don't give up. Some circuses spend as much as six years trying to train a jack ass."

THEY ALL KNEW HER

The volunteer fireman climbed the ladder to the second floor where a very pretty girl waited to be rescued. Never in all his two years at college had he seen a girl as pretty. What mattered the flames when his heart was on fire. Never was he more glad to carry down such a load for the sake of humanity and the high regard of the fire service. He placed her safely on the ground away from the excitement of the crowds, the roar of the pumper and the shouts of the firemen. Their eyes met.

"If you'll give me your telephone number, I'll call you up some time," he said.

"It's in the book."

"That's fine," he replied, "but what's your name."

"That's in the book, too."

What with fountain pens, fire extinguishers, cigarette lighters, flasks, flashlights and lanterns, life is just one refill after another.

A BIRD OF A STORY

Out in Paris, Mo., a truck caught fire as the result of activities of a sparrow. A couple of hours after the first fire was extinguished, a call came in to extinguish a second fire. The sparrows started to build a nest in the exhaust of the truck and the hot air from the exhaust started the fire.

JUST A TRIFLE BETTER

Competition in this Pennsylvania fire department was particularly keen, and on a number of occasions, the officers in charge of two companies had some bitter words.

Again they met at a fire. As the firemen were rolling up the hose, the two officers met and glared at each other.

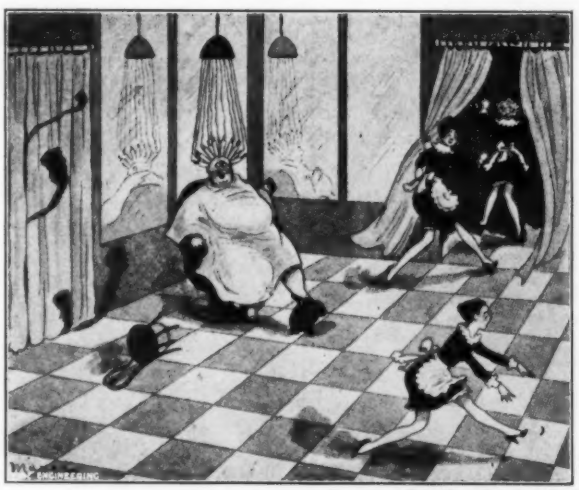
One of the officers could restrain himself no longer, and as he passed his bitter enemy he said, "Some fire department officers that it has been my experience to meet are bad, but you are an exception."

The other one straightened up and felt highly complimented at such praise from an adversary. "Thank you," he replied.

"Oh that's all right," continued the first one. "As I was saying your an exception, exceptionally bad."

THE ALARM

The shriek of a siren rends the air
And screams to the traffic lanes, "Beware!"
It lifts its voice in a piercing wail
And moans like a soul in sad travail
Obeying the uplifted hand of the cop,
The motor cars drive to the curbing and stop
As the little red car with the clamoring bell
Comes ripping and snorting through traffic, pell-mell.
As swift as a greyhound, unfettered and fleet,
It races its way down the length of the street.
Behind it confusion and chaos are found,
The traffic lights blink and the police whistles sound
While autos stand hopelessly jammed in a bunch—
The fire chief's hurrying home to his lunch!—*Life.*



Courtesy, Saturday Evening Post

Luckily for Mrs. Fatenforty, the Fire at the Hairdresser's Proved to Be a False Alarm.

SHE WAS A GOOD WAITRESS

Firemen from the Cambridge fire department in several pieces of apparatus drove up to a fire alarm box expecting to see a large fire. All that they found was an eleven year old girl pulling on the fire alarm box lever.

You are wrong—she was not trying to mail a letter—neither had she any intention of sending in a fire alarm.

Upon being questioned she told the firemen that her friends told her that if she pulled the lever she would get a bar of chocolate. She was still waiting for the chocolate when the companies arrived.

EXPERT, BOTH WAYS

An advertisement in a Pulaski, Va., newspaper read as follows: We thank the many friends, both white and colored for their assistance. Also the firemen for their promptness in the burning of our home.

SHE KNEW IT

As the engine roared down the street in response to a fire alarm, some pedestrian thought that he still had time to cross the street, but he found out later that he was wrong. The mud guard over the front wheel grazed the man and threw him on his back stunned. The apparatus slowed down so that a fireman could jump off to tend to the wants of the injured one.

"What's your name?" the fireman asked, "so's I could tell your mother."

The injured man looked up weakly and in a tired voice said, "What's the good of telling mother, she already knows her name."

TOO PROMINENT

This is the story of poor Bill the bachelor. The term "poor" is used because Bill is no more.

Bill put mirrors all over his room so he could see himself from all sides. One night the electric light went off and so he lit a match. But when he tried to light a candle, he looked by mistake at a mirror, and he put the match into his ear. He put out his hand to take the candle that he had finally lit but he held it the wrong way, and it dropped on his bed and set the bed on fire. When he started to put it out, he threw the water in the wrong direction. Getting scared, he started for the door, but he saw so many reflections he got lost. And so poor Bill was burned to death.

TELLING ON POP

The following conversation took place between two firemen, members of a California town, and judging from the talk, the town was near the place that Mack Sennett made famous.

"Did you hear about O'Brien going in for the field day sports, and entering for the swimming contests.

"Never knew he could swim—what makes you think that he's a good swimmer?" said the other.

"Well at mess, I heard him tell the lieutenant that he knows a lot of the swell dives."

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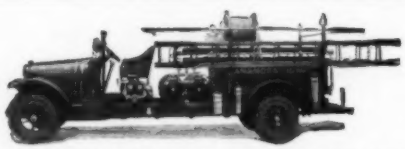

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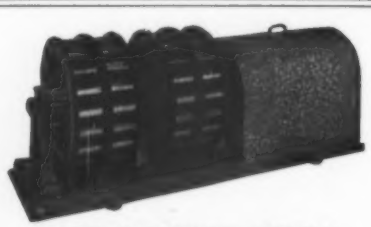

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18 Brakes, Air.
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53 Helmets, Metal, etc.
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55 Hose Clamps.
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59 Hose Jackets.
60 Hose Standardization Tools.
61 Hydrant Draining Pumps.
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63 Jacks for Fire Trucks.
64 Jacks, Shoring & Prying.
65 Ladders, Fire.
66 Lightning Arresters.
67 Motorcycles, Fire Dept. Equipped.
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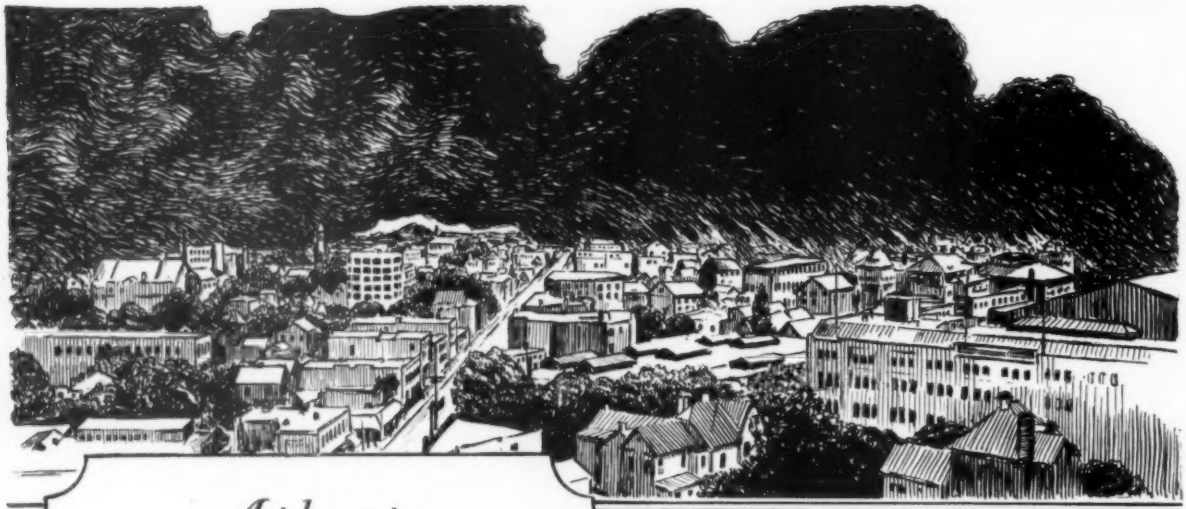

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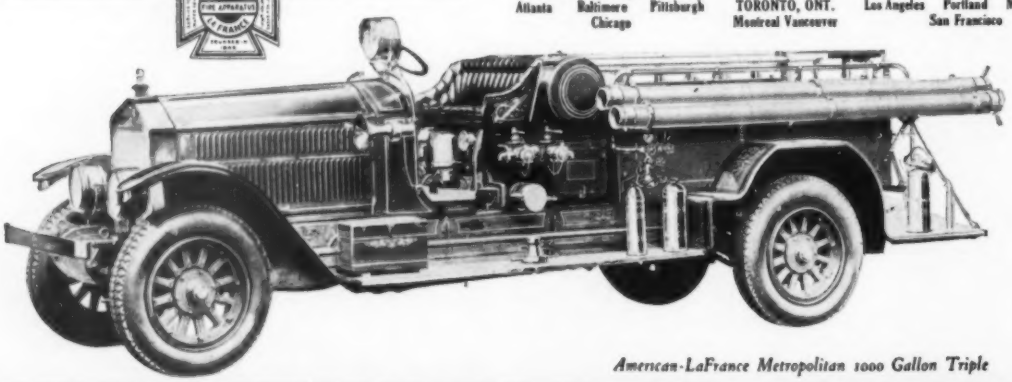

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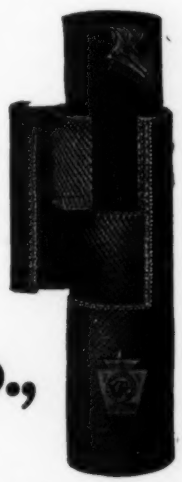

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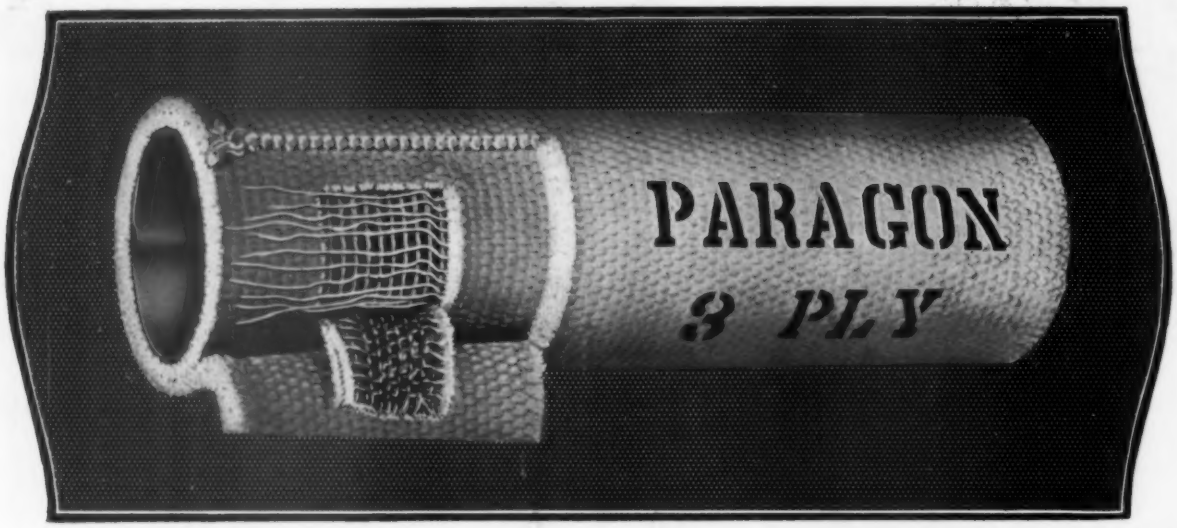

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